

RUTLAND:
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1860.

1860.

REPORT.

TO THE GENERAL ASSEMBLY OF THE STATE OF VERMONT:

In pursuance of "an act in addition to chapter twenty-six of the Compiled Statutes, in relation to railroads," approved November 16, 1855, and "an act relating to the appointment and duties of the railroad commissioner," approved November 18, 1856, the railroad commissioner respectfully submits the following report of the condition and management of the railroads in the State, for the year ending August 31, 1860.

To-day we are reaping the benefits of the wonderful improvement in the means of locomotion within a little more than a quarter of a century. These improvements are alike experienced on land and water.

Some are, doubtless, living who could recount to incredulous hearers the tedious labor and toil of many families in moving their household goods to western New York and Ohio, from Vermont, forty-five years ago, requiring more time than is now necessary for a voyage to Europe and back. There may be those present who will remember the wonderful facility afforded to the western traveller by the packet and line boats on the Erie Canal, where the speed was at the rate of one hundred miles in *twenty-four* hours. This fact causes a smile now, but then it was felt to be a very great improvement upon the means of transport for years before.

This one fact is stated, that by comparison, we may see the progress that has been made in the intervening period, although we shall fail to realize the very great difference. For it is only by comparison that we take note of the improvement at the present day.

The difference shows the present to be the age of progress, a progress as substantial as it has been wonderful and rapid. This

progress is witnessed in the Telegraph, in the Printing Press, and in other things, as well as in our present means of locomotion; it is in truth apparent in almost every thing upon which we fix our eye. The blind are made, in effect, to see, the deaf to hear, and the dumb to speak.

While this paper relates mainly to the condition and management of the railroads in this State, it may not be inappropriate to allude to the origin and history of the railway system, and the locomotive engine.

Although the railway was built and used for many years before the locomotive was introduced, the two are now inseparable.

Wooden rails were used early in the seventeenth century to facilitate the movement of coal wagons, but such use seems to have been very limited, and improvement very slow. Cast iron rails were introduced in England in 1738, more than a century after wooden rails began to be used, and were only employed in the same trade,—the movement of coal. These contrivances, answering, doubtless, a good purpose, must have been rude and imperfect.

In the beginning of the present century, Benjamin Outram introduced stone props to support the joints of the cast iron rails, in Derbyshire, England. These rails were cast with a flange to guide and keep the wheels of the wagon in the proper place. These roads were called "tram roads" from the name of the man who invented the stone supports for the joints. And the "tram roads" appear to have been considerably used for the movement of coal for moderate distances, and sometimes eight and ten miles, and to such an extent as to have awakened apprehensions of a successful rivalry in the minds of some canal proprietors.

The project of moving carriages, on common roads, by steam, dates back to 1759, and experiments were made as early as 1763. In 1769 Watt took out a patent specifying such a machine, though it does not appear that he ever undertook the construction of a locomotive.

In 1772 Oliver Evans invented a "steam carriage" to travel on common roads, which partially succeeded.

In 1784 William Murdock, of England, made a model of a steam carriage, and he succeeded in making it travel. It was on the high pressure principle, and ran on three wheels.

In 1802 Richard Trevethick, a Cornish miner, determined to build a "steam carriage" to be used on common roads, and he

took out a patent for that purpose in March of the same year, and soon after built a steam carriage, which was the first successful experiment of the high pressure principle of moving the piston by the elastic power of steam against the pressure of the atmosphere. This carriage reached the city of London, and there hauled a wheel carriage full of passengers. The inventor, however, abandoned it as a practical failure. In 1804 he constructed a locomotive to run on railroads, with which he succeeded in drawing several wagons with ten tons of iron, at a speed of five miles per hour. This also proved to be a practical failure.

Trevethick's machine, although not adapted for actual work, should not be treated as useless, or as an entire failure, but as a meritorious work. The invention, in truth, was of great value, as it developed some important principles in the mechanism of the locomotive engine.

Trevethick, acting upon the supposition that a smooth wheel upon a smooth rail would not afford sufficient "grip" to produce any useful effect, made the rim of his wheel rough, or with ridges, so that its motion produced a succession of jolts, and these jolts were sadly damaging to the very imperfect tram roads. These destructive effects upon the tram roads doubtless caused the machine to be laid aside as of no value.

Mr. Blenkinsop, of Leeds, acting upon the same supposition, took out a patent in 1811, for a "a ratchet or tooth rail," laid upon one side of the track, on which the cog wheel of his locomotive worked. The boiler was supported by a carriage with four wheels, without cogs or teeth, and rested on the axles. The wheels were independent of the working parts of his engine, merely supporting its weight, the progress being produced by the cog wheel working in the cog rail. The engine had two cylinders, instead of one as in Trevethick's engine. The double cylinders were the invention of Matthew Murray, a mechanic of Leeds, whom Blenkinsop consulted in all the mechanical arrangements of his engine.

Blenkinsop's engine was set to work on the railway, or tram road, leading from the Middleton collieries to Leeds, a distance of about three miles and a half, on the 12th of August, 1812. The engine hauled thirty coal wagons at a speed of about three and a quarter miles per hour. They were among the principal curiosities of the time, and were visited by many strangers. These engines were employed in the haulage of coals for many

years, and furnish the first instance of the regular employment of locomotive power for commercial purposes.*

This, and several other contrivances about the same period, show that inventive minds were more or less engaged in efforts to solve the problem of employing the steam engine for the movement of coal upon the railways. And these inventors appear not to have looked beyond the movement of coal in their labors.

Mr. Blackett, of Wylam, appears to have been the first owner of a colliery in the north of England who took an earnest interest in the locomotive engine, and whose persevering efforts contributed in a good measure to bring about a successful result.

The Wylam wagon-way is one of the oldest in the north of England, and up to 1807, consisted of wooden rails laid from the colliery to the village of Lemington, about four miles down the Tyne. Each chaldron wagon was drawn by one horse, with one man in attendance, and made two journeys a day. This primitive railway passed near the cottage where George Stephenson was born, and was among the earliest objects that met his eyes.

In 1808 Mr. Blackett took up his wooden rails and laid down a "plate way" of cast iron. This was so much superior to the wooden rail that one horse could draw two wagons instead of one, as before.

Blackett, still intent upon employing the steam engine in hauling his coal to the landing place, in 1812 ordered a new engine, not essentially differing from those he had before tried. This was but a rude machine when put on his iron road, where it was placed after much labor, and upon the attempt to start it, it blew up.

This misfortune did not induce him to relinquish his efforts to accomplish his long cherished purpose. In 1813 he took out a patent "for a frame on four wheels on which to mount the locomotive engine." The first experiments which he made with this frame, were to test the adhesion of the smooth wheels of his carriage, sufficiently loaded, upon the smooth rail. Although the experiments seem to have been awkwardly conducted, they proved beyond all doubt that the adhesion of the smooth wheel upon the smooth rail was sufficient to produce the forward motion without slipping. Having then, by further experiment, found the proportion this adhesive power bore to the weight of his loaded carriage, he demonstrated by successive experiments, that the

* Life of Stephenson.

weight of the engine would produce sufficient adhesive power of itself, to draw on a smooth tram road the requisite number of wagons in all kinds of weather.

Thus another step was made towards accomplishing locomotion on railroads, although no effective and useful machine had yet been made.

About this time George Stephenson, to whose birth place near the Wylam tram road, allusion has been made, had been advanced to the place of "engine wright" at the collieries of Killingworth. Soon after being appointed to this post, he directed his inquiries to discover some better way to haul the coals from the pits to the place of shipment, the haulage by horses being both slow and expensive. His inquiries led him to conclude that the travelling engine must be *the thing* best fitted to accomplish this purpose.

He had seen and examined and considered the machines of Trevethick, Blinkinsop and Blackett, all of which had been regarded, as practically, failures, and up to this time none of those who had made the attempt, had succeeded in constructing a valuable steam engine. And notwithstanding several important discoveries had resulted from the various experiments, the great body of owners of collieries were strongly inclined to wholly abandon the project of building any more steam engines.

But not so with Stephenson, his investigations had led him to say that he could make a machine that would work. Yet he was destitute of the means to enable him to undertake such a work, though his perseverance, skill and success in repairing and improving the steam engines for pumping and for raising the coal from the mines, had won him the confidence and friendship of many of his acquaintances.

So sure was Stephenson of success, that in 1813 he brought the subject of building a "travelling engine," as he called the locomotive, before the lessees of the Killingworth colliery. He gained the interest of Lord Ravensworth, the principal partner of the lessees, who had before formed a favorable opinion of Stephenson's skill and talent, from the important improvements he had made in the colliery engines. He listened to his statements of the practicability of building a locomotive to do the work of hauling the coals to the landing place on the Tyne, and of its almost unlimited capacity, if all the works were put in good condition. Lord Ravensworth was so far convinced that Stephenson could accomplish what he had stated, that he directed him to pro-

ceed in the construction of a locomotive engine, and provided the money needed to go on with such a work, while the grumblers of that day called him a fool for furnishing money for such a use.

The difficulties which surrounded Stephenson in this, his first attempt to build a "travelling engine," will scarcely be appreciated in the locomotive works of the present day. Skillful mechanics were not found about the collieries, and their tools were but poorly fitted to prepare the machinery of a locomotive. Stephenson himself had little knowledge of the principles of mechanics, except what he had acquired in overhauling and repairing the pumping engines at the coal mines; his knowledge of books was very limited; he knew not the letters of the alphabet till he was eighteen years of age; and his mathematical attainments did not extend beyond the simplest rules of arithmetic, to "the rule of three." But he heeded no obstacle, however formidable; he knew not failure, but fully understood the successful result of perseverance. With a common blacksmith for his master mechanic, aided by his own scanty mechanical knowledge, he went on with the construction of his engine, and at the end of about ten months, on the 25th day of July, 1814, he placed his engine on the Killingworth tram road, and the same day its capacity was tested.

This engine succeeded in drawing eight wagons loaded with thirty tons, up an ascending grade of 11.73 feet per mile (or 1 in 450), at the rate of about four miles per hour, and was the most successful working engine that had yet been built. It was worked regularly for some time after.*

Although a considerable advance, says Stephenson's biographer, upon all previous locomotives, it was a cumbrous and clumsy machine. Upon careful comparison with horse power, at the end of the first year, the two in point of cost were found nearly upon a par; so nearly indeed was the question of economy balanced, that for a time it was doubtful whether it would be found expedient to employ locomotive power.

At this critical period for his engine, Stephenson's ever fruitful mind did not fail him; he had carefully studied the serious defects of his machine, and the question of increasing the production of steam he had carefully considered, and now added the "steam blast" to his engine. The result more than equalled his expectations, the power of his machine was doubled at once, and without any increase of its weight. This result may probably

* Life of Stephenson.

be regarded as settling the question of employing locomotive power in the transportation of *coal*.

In 1815 Stephenson took out a patent for a locomotive steam engine, and under this patent he built a new machine in the same year. He made some improvement in his "steam blast," changed entirely the form of applying the power to the wheels, and nearly remodeled all the working machinery. This new machine in fact embraced all of the essential parts of the locomotive of to-day.

Great and important improvements have been added to the locomotive since 1815 (and many of these improvements were made by Stephenson himself), yet he may very properly be regarded as the founder of the locomotive steam engine, so indispensable to the railway system. His biographer says, what is doubtless true, of this engine of 1815, "it is perhaps not too much to say that this engine, as a mechanical contrivance, contained the germ of all that has since been effected. It may, in fact, be regarded as the type of the locomotive engine."

The Killingworth railway continued to be worked with a good degree of success, with the locomotive engine, although this fact excited but little interest among the owners of the coal mines generally, and as a body they were not disposed to favor this method of hauling the coal; yet the public interest in the matter did increase, although it was at a creeping pace.

The Hetton railway, a coal road, eight miles in length, was opened in 1822, on which one of Stephenson's locomotives was employed.

The first public railway,—however, the Stockton and Darlington,—projected in 1819, against very earnest and persistent opposition, was opened for traffic on the 27th of September, 1825. On this occasion a wide interest was awakened. "Some went to rejoice at the opening, and some went to see the bubble burst; and there were many prophets of evil who would not miss the blowing up of the Travelling Engine." On this railway were inclined planes worked with stationary engines, and the more level portions were operated with the locomotive engine. "The opening was auspicious."

In 1824 the project of a railway from Liverpool to Manchester was revived. In March, 1825, an application for a charter came before Parliament, but so strong was the opposition to the grant, that the friends of the bill withdrew it. At a subsequent day, after mature and anxious deliberation, the application was re-

newed. This application also encountered very strong opposition in the House of Commons, but the friends of the measure in the end succeeded, and the charter was granted. But the opposition did not cease upon the granting of the charter. It was continued with great virulence and perseverance; and when the building of the railway was going on with every prospect of success, the opposition was renewed against the employment of locomotive steam power in operating it. And it was only after long deliberation, accompanied with bitter controversy, within and without, that a majority of the board of directors decided to make the experiment of locomotive steam power.

The board of directors offered a prize of £500 for the best locomotive engine, to be built under certain specified restrictions.* But the question of employing locomotive power, even if the experiment should prove successful, which was very much doubted by many, was still left undecided.

On the 1st of October, 1829, the day fixed upon for the trial, four engines were entered for the experiment, the "Rocket," built by Stephenson, being one of the number. The trial was not made until the 6th of October, when the "Rocket," complying with all the specified conditions, made a speed at the rate of twenty-nine miles per hour, nearly three times greater than required by the specified conditions. The prize was awarded to the Rocket. This result settled the question so long and so earnestly agitated. The multitude were filled with rejoicing, but not a few were filled with disappointment.

The Liverpool and Manchester Railway was publicly opened on the 15th of September, 1830, and it was celebrated as a great

* The conditions are these:

1. The engine must effectually consume its own smoke.
2. The engine, if of six tons weight, must be able to draw after it, day by day, twenty tons weight (including the tender and water tank) at ten miles an hour, with a pressure of steam on the boiler not exceeding fifty pounds to the square inch.
3. The boiler must have two safety valves, neither of which must be fastened down, and one of them be completely out of the control of the engineman.
4. The engine and boiler must be supported on springs, and rest on six wheels, the height of the whole not exceeding fifteen feet to the top of the chimney.
5. The engine with water must not weigh more than six tons; but an engine of less weight would be preferred on its drawing a proportionate load behind it; if of only four and a half tons then it might be put on only four wheels. The company to be at liberty to test the boiler, etc., by a pressure of one hundred and fifty pounds to the square inch.
6. A mercurial gauge must be affixed to the machine, showing the steam pressure above forty-five pounds per square inch.
7. The engine must be delivered complete and ready for trial, at the Liverpool end of the railway, not later than the first of October, 1829.
8. The price of the engine must not exceed £550.

national event. It was, indeed, an era in the history of the railway system. And may we not here award to the memory of George Stephenson, its founder, the tribute of our highest regard!

To-day, we look with satisfied curiosity upon the power and performance of the locomotive engine, and upon the wonderful and beneficial results of the railway, but we fail to appreciate the labor and toil and anxiety of its founder.

From the date of the opening of the Liverpool and Manchester Railway, the extension of the system was onward and rapid, rapid almost as the speed of its locomotives, in Great Britain and on the Continent.

Previous to the opening of the Liverpool and Manchester Railway, but during its construction, the first railroad was built in the United States, at Quincy, Massachusetts. This road was three miles in length and used for hauling granite from the quarry to the wharf; the superstructure consisted of 3x4 inch oak scantling laid upon sleepers, and upon the scantling a flat bar of iron five-eighths of an inch in thickness and two and one-fourth inches wide formed the track for the wheels; the car was drawn by horses. This road was in operation early in the year 1827.

The Mauch Chunk Railroad, nine miles in length, was similarly built, and was opened in May, 1827, and used for the movement of coal.

The first locomotive built in the United States was built at the West Point Foundry, and placed on the South Carolina Railroad December 14, 1830. The driving wheels were made of wood with iron tire; the engine had no tender and carried her wood and water. The wooden wheels soon failed under the service required of the engine and were replaced with cast iron. (R. R. JOURNAL.)

The Mohawk and Hudson Railroad, (name subsequently changed to Albany and Schenectady) was chartered in 1826, and was opened for traffic in the year 1831. This road terminated at the wharf at the extreme south end of the city of Albany. It was operated by a stationary engine and an inclined plane at the east end; also by a stationary engine and an inclined plane at the west end. There was a branch track for passengers commencing near the top of the inclined plane on the Albany side, operated by horse power for the conveyance of passengers, and the passenger depot was on the north side of State street, above

Pearl street. The remainder of the road between the inclined planes was operated by locomotive engines.

This road was built at great expense, with the intention of being entirely secured from the effect of frost. The construction of this road shows the state of railroad engineering and experience at that day.

This road continued to be thus operated for from ten to twelve years, when the location was changed to its present place, and the inclined planes abandoned.

The Camden and Amboy Railroad, in New Jersey, was commenced on the 9th of October, 1830, and on the 1st of January, 1835, the mail was transported over this road by steam from New York to Philadelphia.

The Boston and Worcester Railroad, Massachusetts, was opened the 6th of January, 1835, and the Boston and Providence Railroad was opened in August following. These dates are given that it may be seen what was the condition of the railway interest at that period, and with what rapidity that interest has increased in the United States within the last quarter of a century.

From the best data at hand, it appears that at the beginning of the year 1860, there were in operation in the United States, 27,850 miles of railway, costing \$958,647,264, or nearly \$34,422 per mile.* These figures are not given as entirely reliable, either as to length of line or cost, but are probably in both particulars, considerably within the truth at the present time. They are sufficient, however, to impress upon the mind the magnitude of the railway interest in the United States. But who comprehends the magnitude, or appreciates the importance of this interest!

We glance our eyes over a railway map of the United States and see the "net work of railways" spread over its length and breadth, but we do not reckon up the multiplied ramifications of this net work or count its details; we content ourselves with the superficial view, while we wonder at its extent. If any man would apprehend, approximately even, the magnitude of the railway interest in the United States, he must set down to its details. He must take into account the length of the roads, the whole length some 30,000 miles, the cost, the large number of men employed in their management and operation, the expense incurred in keeping them in proper condition; he must take into account

* From Bangor, in Maine, to New Orleans, there is a continuous line of railway of 2340 miles in length.

the thousands of passengers daily transported over their length, the abundant agricultural products of the country, grain, cattle, sheep, etc., the products of the forest, the mine, the quarry, the work-shop, and of commerce, moving daily from point to point, and to a market; and when he has brought all these results together, and considered their aggregate, he may then take into the account the rapid development of the powers and resources of the country, the unprecedented increase of the population of the Western and North-Western States; and when he has done all this, he is like a man in mid-ocean, looking for land, his view is bounded by the visible horizon in every direction, the shore is far beyond, out of sight.

We may properly allude to our neighbors of Canada, with their two thousand miles of railway, including their "Grand Trunk Railway" of eleven hundred miles in length, costing \$60,000,000, linked together over the St. Lawrence with that magnificent structure, the Victoria Bridge.

From the best data that has yet been furnished, it is concluded that the railways of the other nations of the earth are but about equal to the length of railway in the United States.

VERMONT RAILWAYS.

Vermont enterprise was early directed to the subject of railroads. It would seem that the impulse given to the subject in England, by the successful opening of the Liverpool and Manchester Railway, was soon felt in this country. At the session of the Legislature in 1830, a resolution was passed requesting our Senators and Representatives in Congress to use their influence with the national government to cause a route for a railroad to be surveyed from Boston, in Massachusetts, to Ogdensburgh, in the State of New York. But I am not aware that anything was accomplished under this resolution.

Public opinion was but slowly developed upon the subject of railroads. Not only the novelty of the subject, but several erroneous views in the public mind, contributed to this result; while the great outlay of capital necessary to the construction of railroads, seemed to place the object beyond the reach of Vermont. Yet the frequent acts of incorporation, granted by successive Legislatures, show conclusively that the minds of many intelligent men in different parts of the State, were in some measure awake to the importance of the matter. Even as late as the session of

1843, at which four roads were chartered and subsequently built, perfect apathy pervaded the Legislature, and it was with some difficulty that any members could be found to advocate any such chimerical projects as building railroads along and *over* our mountains. One gentleman, a member of the Senate, who had been persuaded to introduce one of the bills in the Senate, afterwards confessed that he never read the bill, as he had no confidence in the project. And this gentleman was by no means alone or singular in this opinion.

I give here a list of the several charters and the date of the session of the Legislature at which they were granted, as a part of the history of railroads in the State, and as a matter, of convenient reference.

In November, 1831, the Rutland and Whitehall Railroad Company was incorporated.

In October, 1832, the Vermont Railroad Company was incorporated.

In October, 1835, the following railroad companies were chartered, viz:

The Vermont Central, the Bennington and Brattleboro, the Rutland and Connecticut (River), the Vergennes and Bristol, and the Connecticut and Passumpsic Rivers.

The route for the last mentioned road was subsequently surveyed, in whole or in part, by Prof. A. C. Twining.

In October, 1836, a new charter was granted for a railroad from Rutland to the west line of the State, in the direction of Whitehall, in the State of New York, in connection with the Rutland Railroad Bank.

At the same session of the Legislature, the Norwich and Hartford Forwarding Railroad Company was chartered.

In October, 1838, the Lake Champlain and Otter Creek Railroad, extending from Brandon to Lake Champlain, with a branch to Middlebury, was chartered.

In 1843, the following railroad companies were incorporated:

The Vermont Central, the Champlain and Connecticut Rivers (Rutland and Burlington), the Connecticut and Passumpsic Rivers (act reviving), and Brattleboro and Fitchburgh (Vermont and Massachusetts).

In October, 1845, the Vermont and Canada Railroad was incorporated,

In November, 1845, the Western Vermont Railroad was incorporated.

In October, 1847, the Rutland and Washington Railroad Company, the Union Railroad Company, and the Woodstock Railroad Company were incorporated.

In 1848, the following railroad companies were incorporated:

Rutland and Whitehall, Southern Vermont, Danville and Passumpsic, Vermont Valley, and Atlantic and St. Lawrence.

In October, 1849, the Montpelier and Connecticut River Railroad Company, and the Ascutney Railroad Company were incorporated.

In October, 1850, the following railroad companies were incorporated:

Missisquoi, Vermont, North Eastern, and Ashuelot.

In 1851, the following railroad companies were incorporated:

Midland, New York and Bennington, Swanton and Highgate, the Wantastiquet, Woodstock (in addition to act incorporating).

In 1852, the West Castleton Railroad was incorporated.

In 1853, the Eagle Railroad Company, and the Sudbury Railroad Company were incorporated.

In 1854, the Island Pond and St. Johnsbury Railroad Company and the South Shaftsbury Branch Railroad Company were incorporated.

In 1855, the Bennington and Glastenbury Railroad Company, the Bell Water and Island Pond Railroad Company, and Fairhaven Railroad and Slate Company were incorporated.

In 1856, the Perkinsville Railroad Company was incorporated.

In November, 1857, the Northern Vermont Railroad Company was incorporated.

The Rutland and Burlington Railroad was opened for travel the 18th of December, 1849, and the Vermont Central Railroad was opened early in January, 1850; but no document at hand will enable me to give the date of the opening of the other railroads in the State.

The following is a list of railroad companies in this State required to make reports annually to the Railroad Commissioner: Atlantic and St. Lawrence, Passumpsic and Connecticut Rivers, Rutland and Burlington, Rutland and Washington, Rutland and Whitehall, leased to the Saratoga and Washington Railroad Company in the State of New York, Southern Vermont, leased to the Troy and Boston Railroad Company in the State of New

York, Vermont Central, Vermont and Canada, Vermont Valley, Western Vermont, also leased to the Troy and Boston Railroad Company.

Reports have been received from the railroad companies in the order and at the dates specified as follows :

The Vermont and Canada, September 16, 1860.

The Atlantic and St. Lawrence, September 18, 1860.

The Passumpsic and Connecticut Rivers, September 24, 1860.

The Vermont Central, September 26, 1860.

The Vermont Valley, September 28, 1860.

The Rutland and Burlington, October 4, 1860.

The Rutland and Washington, October 9, 1860.

The Vermont and Massachusetts, October 10, 1860.

When entering upon the discharge of the duties of Railroad Commissioner, I acted on the belief that there is a community of interest between the public and the railroad companies of this State. I have not felt that fault-finding constituted any part of my duty, but have endeavored to examine the several roads with regard to the rights of the public and the ability of the corporations.

The public have the right to require of the railroad company and managers, at all times, reasonable security to their persons and property while in transit over the road. In relation to the structures of the roads, such as bridges and culverts, where probably the greatest risk is incurred, the public may properly require and have the right to expect absolute security, so far as relates to the quality of the material and the perfection of the workmanship. So also in relation to the track and machinery; yet it should not be forgotten that with the utmost care in construction, and watchfulness in the operation of the road, no human foresight can always prevent the breaking of a rail, a wheel, or an axle.

For the labor and care and expense incurred for the security of persons and property, and for the facilities furnished for the transaction of business, and for travel, the railroad companies are entitled to, what they have not always received, a reasonable compensation.

Though recklessness, want of wisdom and integrity, without measure, have been charged upon the earlier managers of our roads, the mischiefs thereby incurred are not to be charged to the managers of the roads at the present time, as some seem to imagine.

Evils resulted from the want of knowledge and experience, perhaps chargeable to ignorance more than want of integrity, sometimes, both on the part of directors and engineers, and some of these evils are to be charged to the incompetency of the engineer department rather than that of directors.

Evils may now be detected which have resulted from committing a whole work, including engineering, to the control, in fact, of the contractor.

LENGTH OF RAILROADS IN THE STATE IN OPERATION.*

	Miles.
Atlantic and St. Lawrence, ..	30.65
Connecticut and Passumpsic Rivers,.....	90
Rutland and Burlington,.....	119.54
Rutland and Washington,.....	29.8
Rutland and Whitehall, ...	8.81
Southern Vermont (no returns), say,....	6
Vermont and Canada and Vermont Central,	166
Vermont Valley,.....	23.7
Vermont and Massachusetts,	10
Western Vermont and branch, say,.....	58.5
Total,.....	548
Whole length of side track as returned,.....	50
Whole cost of construction and equipment as	
nearly as can be ascertained from reports, ...	\$20,718,278 05
Average cost per mile,.....	34.471 95

In my examinations of the railroads, I have received all the facilities for making such examinations which have been requested; and in the examinations of the Vermont Central, the Vermont and Canada, the Rutland and Burlington, the Passumpsic and Connecticut Rivers, and the Vermont Valley, I have been accompanied by some of the officers of these several roads, and I desire here to express my thanks to the officers and employees of the roads for the courteous and gentlemanly treatment which I have uniformly received.

I have made a somewhat careful examination of all the roads and nearly every bridge in the State, and the exceptions have been the bridges with which I was well acquainted, and these

* Some of these I have been obliged to gather from other sources than the reports of the companies.

exceptions are confined to the Rutland and Burlington road. These examinations have required me to walk over more or less of all the roads, and nearly the entire length of some of the principal ones.

In early spring, all the roads in the State were found in unusually good condition, due, very much, to a most favorable winter. With the usual amount of labor bestowed upon the road bed and track, the roads, taken as a whole, are in better condition this season than I have ever seen them.

The Rutland and Washington and the Western Vermont roads, to some extent may be considered as exceptions to this general statement, in relation to want of repair of the rails, and renewal of decayed ties. I do not regard the want of repair of the rails (at the joints) as endangering the security of the passenger, but such want of repair has an important relation to the economy of the management—it adds greatly to the cost of repairs of the rolling stock.

Considerable portions of the Rutland and Washington road, between Castleton and Centre Rutland, have been relaid, within some two years, with new iron, and the track is in good condition. A part of this road between Pawlet and Rupert has not been fully ballasted, owing to the want of the proper material within convenient distance, and the embankment, not being of good material, is thus rendered more difficult and expensive to be kept in good condition.

Since writing the above paragraph I am pleased to learn from the managing trustee, that he is relaying some new iron in place of rails much worn.

It is due to the trustees to say, that when they assumed the management of this road it was in a dilapidated condition, in addition to its embarrassed finances.

The Western Vermont Railroad passes over a territory possessing an abundance of material for making an excellent road bed, and such road bed may be more cheaply kept in repair than any other in the State of the same length. The ends of many rails on this road need to be repaired for reasons before mentioned—the ties also in many places need to be renewed. I have noticed at places where the section men were making repairs, too large a proportion of ties, nearly useless for the purpose intended, were retained. In one case the section man said, “he left all the ties in that could be tamped,” and some of these were not sufficient

to hold a spike. And on being asked the reason, he replied "it was in accordance with instructions."

In operating our railroads it was early discovered that some new mode must be adopted to secure the ends of the rails from the excessive wear to which they were exposed, or a very heavy expense must be incurred for the renewal of the iron. As one means of obviating this difficulty, Thomas Thacher, Esq., managing trustee of the Rutland and Burlington road, adopted the plan of repairing the ends of the rails without the expense of re-rolling. This plan, although the work of welding is but imperfectly done with ordinary hammers, has answered an excellent purpose, and has been generally adopted.

Several arrangements have come under my notice designed to secure the ends of the rails against this excessive wear.

One plan, quite extensively adopted, is, to lay the rails on one side of the track so that the joints shall be opposite the middle of the rail on the other side, or in fewer words, "breaking joints." This has in some measure obviated the difficulties intended to be remedied—partially relieving the shock of the wheels on the joints, and giving the train an easier and smoother motion. And so far as it has come under my observation, in walking over the roads, there is less wear at the joints than in the usual plan of laying the rails. In this way of laying the rails, the road master says, more labor and care are required "to keep up the track." This plan has been tried on the Rutland and Burlington and the Vermont Valley roads.

Another method, in use on the Atlantic and St. Lawrence road, is "to fish" the joints. This is done by bolting straps of iron two feet in length, upon both sides of the rail, and extending one foot from the joint on each rail—no chair is used and the joint rests on the tie. In this way the longitudinal motion of the rails is effectually prevented, which is an important point gained. This plan so far (having been in use about one year) bids fair to answer a good purpose—obviating the unequal wear of the rail at the joints, and giving an easy motion to the cars. This arrangement, as the District Superintendent informed me, costs "about one dollar per joint." The road master said "the only difficulty with this plan was, that in the winter the iron straps sometimes broke"—owing, probably, to not providing for the contraction of the rails by cold.

Another method, in use on the Vermont Central and the Ver-

mont and Canada roads, is, to substitute for the cast iron or wrought iron chair, the Howe chair, perhaps not necessary to be described here, and not having either a drawing or the dimensions of the several parts of which it is composed, I will not attempt its description. The rails rest upon the bottom piece of the chair (wood) which is supported upon two cross-ties, laid a short distance apart, the joint of the rails being over the space between them, and in this position the chair is firmly secured to each rail, so as to entirely prevent either a lateral or longitudinal movement of either rail. There is sufficient elasticity in this chair so as to ease the joint from the shock of the passing wheels, and to preserve it from excessive wear. The change in the motion of the cars, and the cessation of the noise produced by the almost constant stroke of the wheels upon the joints of the rails, laid in the usual way, are perceptible to the most casual observer. This is also true of the other methods before mentioned. This chair cost from sixty cents to sixty-five cents each, and is patented.

This chair is in use to some extent on the Passumpsic and Connecticut Rivers road, as an experiment. Its use there is understood to give good satisfaction.

The part of the track, on the Vermont Central road, where this chair was first used, something more than four years previously, and on which neither rail or chair had been changed—showed as little wear at the joints as on any other portion of the rail, and if there was any difference it was in favor of the joint.

This chair, which is susceptible of important improvement, may accomplish the object so long sought, the uniform wear of the rail in its whole length.

It is understood that the track is more easily kept up, with the use of this chair, than in the old method of laying the track, and that the section men must prefer it.

As before stated, I have made a careful examination of nearly all the railroad bridges in the State. The bridges on the Vermont Central railroad are mainly in good condition; two of the longest have been recently rebuilt, and several others thoroughly repaired. One bridge, between Northfield and Montpelier Junction, needs rebuilding, and which the superintendent informed me they were then preparing to rebuild. It was made secure by sufficient props to render the passage of trains safe. The long bridge over White River at West Hartford recently rebuilt, is a double lattice with arch beams on the side of each truss, and of

good workmanship. At the time I saw the long bridge at Wiliston, over Onion River, also recently rebuilt, they were adding another lattice to each truss. The bridges on the road are all well covered. The masonry of several of their large bridges shows, at this time, that it was not of sufficient strength for the service required of it, and although it shows distinct signs of weakness, it has been sufficiently guarded to insure present security.

An expensive bridge has been rebuilt this season on the Vermont & Canada road, over the Lamoille River at Georgia; this also is a double lattice, with arch beams on each side of the truss. The masonry of this bridge is well laid and evidently of sufficient strength. The whole structure cost about 65,000. There is a bridge over a highway on this road, a common stringer bridge, of unnecessary length, which needs to be rebuilt. When I saw it, it was in a condition to be safe for the time being. I was also informed that they were preparing to re-build it.

The extensive pile bridging on the road across Missisquoi Bay and Lake Champlain, I deem to be safe. If there is any fault to be found with the bridge at Georgia and the bridge at West Hartford, it is because there is too much timber in them. When there is sufficient timber in a bridge to give it requisite strength and stiffness, all addition to it is useless; the additional timbers add unnecessary weight and increase the liability to decay. The trusses in each of these bridges are undoubtedly of sufficient strength to sustain the weight of the structure and of passing trains; and if I recollect rightly, the dimensions of the arch beams, also are strong enough to sustain the weight of the structure and the passing train. It is very difficult so to adjust these two parts of the structure as not to throw nearly the whole weight of bridge and train upon one of them.

The bridges on the Rutland & Burlington road are mainly in good condition, and safe for the transportation of passengers and freight. The bridge over Cold River in Clarendon will soon need to be rebuilt. A short bridge near Bellows Falls, which was in a dilapidated condition has been rebuilt the past season. I found a common stringer bridge on the Otter Creek flats below Brandon, which needed to be rebuilt, and preparations were making to rebuild it. Several new bridges have been built on this road recently—two to supply those that were burnt, and the others to supply decayed ones. These have all been built after the Howe patent. The bottom and top chords are of southern

pine, and the braces and counter braces are of white pine. The dimensions of the timbers have been increased from the dimensions of the old bridges, and are very stiff and substantial structures. *Good* southern pine is probably the best timber for chords of any timber now in use for this purpose.

My observation and experience have led me to give preference to the Howe bridge for railroads to any other bridge in use in this State.

The first bridges of this kind built on our roads were built of too small timbers.

Several of the bridges on the Rutland and Washington road have been recently rebuilt. Four of the remaining larger bridges need rebuilding. They are probably at the present time safe. And the superintendent informs me that one of these bridges at Pawlet is now being rebuilt.

Most of the larger bridges on the Western Vermont road have been rebuilt within the last two years. I was at Manchester early in September, and the station agent informed me that the bridge over the Battenkill, south of Manchester, was being rebuilt. The bridge across Otter Creek, next above Wallingford village, has been taken down, and heavy stringers, supported by trestles, have been put in its place. I am not able to say whether the bridge is to be rebuilt or left in its present condition. As it now is, it is safe for the time being—but might be exposed to be carried away by a heavy freshet in summer or winter. Some of the short truss bridges on this road have been rebuilt this season. The trusses are mostly new. Some new floor timbers have been put in, and part of the old floor timbers retained. These old floor beams are spruce, and have been in use some eight years, exposed to the weather, and are not all sound. The short truss bridge near Wallingford station, has been supplied with new floor beams, sufficient to make it secure, but of the others I cannot speak with confidence of their safety. There are several other short truss bridges which ought to have been rebuilt the present season.

When the lessees went into possession of this road, the bridges, with two exceptions, were in a bad condition, and never had been covered. The bridges which have been rebuilt have also been left uncovered, and being built of spruce timber, will rapidly decay. The bridge north of Arlington village was covered when the road was first built, and is in a good state of preservation now.

The bridges on the Passumpsic and Connecticut Rivers road,

the Vermont Valley road, and the Vermont and Massachusetts road, in this State, are in a fair condition.

The bridges on the Atlantic and St. Lawrence road in this State, are in good condition, with a single exception—a short stringer bridge near the water station in Norton, which needs to be rebuilt. Three of the truss bridges are new and very substantially built. A Howe bridge in Bloomfield was being repaired; putting in arch beams to stiffen the truss. The other bridge is an iron girder bridge. The girders of this bridge are of boiler plate iron, and are built in a manner similar to the sides of tubular bridges.

Good progress has been made in constructing the new road from Winooski Bridge to the termination of the Vermont Central road on the lake shore, under the law of the last session of the Legislature. The amount expended has not been reported.

The Passumpsic and Connecticut Rivers Company are now constructing another portion of their road, some two miles in length, in continuation from the present termination in Barton. It appears desirable for the interest of Orleans county that this road be completed to the north line of the State, at the earliest practicable period.

So far as has come under my observation, or to my knowledge, the roads have been well managed to secure the comfort, convenience and safety of the passengers. That they have been managed with care for the security of the passenger, is evident from the fact that of the 500,000 passengers carried in the cars, by five of the roads, the present year, not one has been killed or injured.*

I have not ascertained “any neglect or infringement of the laws for the regulation of railroads in this State,” except in relation to their annual report. In this particular, neither from the corporations, trustees or lessces, no report has been received from the Rutland and Whitehall, the Southern Vermont, or the Western Vermont railroads.

If any one will read the reports of the several railroad companies and compare them one with the other, he will see their want of uniformity. This want of uniformity renders an abstract

*In further demonstration of the safety of railway travelling:—The Eastern Railroad, Massachusetts, for the year 1859, carried 1,300,000 passengers not one of whom were injured.

There were carried on the New York railroads for the year ending the 30th of September, 1859, including the city roads, 51,386,998 passengers, of whom only 10 were killed and 33 injured. (STATE ENGINEER'S REPORT, 1859.)

of the reports impossible. For instance, one gives under the head of "Cost of construction," the several details under that head, as graduation, masonry, &c., and under the head "Equipment," the total cost without any details. Another gives the total cost of construction and equipment together in one sum.*

Similar want of uniformity is seen in the returns under the head "Business of the year." Some of the reports contain answers to most of the items; some embrace two of the items and give the total of the two only, and omit entirely answers to other items. This want of uniformity also renders any connected useful deductions from them impracticable.

The first Railroad Commissioner, Charles Linsley, Esq., fixed the end of the year for which reports were to be made, on the 31st of August. Three companies have made reports corresponding with that period. One company makes report for the year ending the 31st of December, 1859; one for the year ending the 31st of May, 1860, and one company for the year ending 30th June, 1860.

In furnishing blank forms for reports of the several railroad companies, I have pursued mainly the form prescribed by Mr. Linsley, from an unwillingness to make material alterations without legislative direction.†

I respectfully submit to the Legislature the expediency of so amending the law relating to the annual reports of railroad corporations as to fix the termination of the year for which the reports are to be made, and to prescribe the form and details of the reports, and I here suggest the 30th day of June as a convenient termination of the year, and that the returns be reported to the railroad commissioner on or before the 15th of August following. Such an alteration would give the commissioner sufficient time to make up his report and have it printed by the time required by the present law, which, under the present arrangement, is impossible.

If the reports of the several railroad corporations are made up with the care and attention to detail as they ought to be made, they would be very valuable for comparison and reference hereafter.

Some slight changes might be needed in the manner of keeping

* See reasons in the reports.

† See blank form at the end of report.

the account, but when once made, the labor of making the annual report would be little more than the work of computation.

The reports should be so made up as to enable any intelligent man readily to ascertain the *true* financial condition of every railroad company in the State. This is due to the legislature as well as all parties interested in the prosperity of the several railroads. This can be done by the several railroad companies without much extra demand upon their time or labor.

Perhaps the law requires that the railroad commissioner should furnish this information to the legislature; but as neither of my predecessors, both eminent for their legal knowledge and ability, appear to have attempted to accomplish this, I may possibly have a valid excuse for not undertaking the responsible and arduous labor necessary to its accomplishment. It would probably require of the commissioner, to make the necessary investigation and examination of the books of the companies, the trustees and lessees, the time of every working day in the year, with more or less assistance.

It may sometimes occur that the railroad commissioner will find a bridge or other structure in such condition as in his judgment to require immediate repair, he may notify the managers of the road of such needed repair, and besides this he has no power or authority to require the repair to be made, and the officers of the road pay little or no regard to the matter.

Although I am not in favor of giving any one man much discretionary power in matters of as great importance as this, involving as it does the rights and claims of the public, and the rights and liabilities of the railroad corporations; yet I respectfully submit to the legislature whether it would not be wise to empower the railroad commissioner to cause repairs to be made so far as to secure safety to the public.

I know it is claimed by railroad managers that there always is sufficient inducement for them, in the hazard incurred to the character of their road and the liability to damages, promptly to make all repairs requisite to public safety. I know also that notwithstanding the power of this motive, that very fearful and sad results have followed the want of prompt and timely repairs in cases where the necessity of such repairs was fully known to officers of the roads.

It may not be improper for me to allude to a complaint which has come to my knowledge, and which, if well founded, may

involve the infringement of a law of the State "relating to railroad corporations," "approved Nov. 13, 1850."

The Passumpsic and Connecticut Rivers Railroad Company complain that the Atlantic and St. Lawrence Railroad Company is employing improper means to divert passengers and freight from its road, which, at fair rates of fare, would naturally and more conveniently come to it. The former company states that the Atlantic and St. Lawrence Company receive passengers and freight at Island Pond from places in Orleans county, and transport to Boston at prices much below the tariff rates, and at rates below the actual cost of transportation. Such a course naturally, if not necessarily, provokes the other company to reduce its prices, in order to retain the business legitimately belonging to it, and thus becomes ruinous to the roads in the State, and mischievous in its influence upon the public.

I owe an apology to the General Assembly for the incomplete manner in which this report is presented. It will probably be found deficient in several particulars, some of which it was intended to embrace. In the early part of September I was attacked with severe inflammation in my eyes, making it impossible for me to do any business for the succeeding four weeks. I have thus been obliged to put together most of this report through the help of an amanuensis, a method of composing which I have never before been obliged to adopt.

All which is respectfully submitted,

A. L. BROWN, *Railroad Commissioner.*

Rutland, October 13, 1860.

SUMMARY.

The following summary has been made up from a part only of the annual reports—exclusive of the Atlantic and St. Lawrence Company, which furnishes no data for the road in this State—the Vermont and Massachusetts Company report not returned in season, and the Western Vermont, Rutland and Whitehall, and Southern Vermont, from which *no* returns have been received.

TABLE E.

BRIDGING.

Total length,.....	25,990 feet.
Number of road crossings at grade,...	183
“ “ “ above and below grade,.....	56

BUILDINGS AND FIXTURES.

Passenger houses,	68
Freight houses,	46
Engine houses,	15
Repair shops,	9
Water stations,	55
Dwellings, ...	14
Wood sheds,	81
Turn tables,	10
Other buildings as follows :	
Car houses,	6
Rail repair shops, ..	2
Ice houses,	4

EQUIPMENT.

Number of locomotives owned by the companies on the 31st day of August, 1860.

	Under 16 tons.	16 to 20.	20 to 25.	25 to 30.	30 tons and over.
In good repair,.....		11	22	26	
Requiring slight repair,.....	1	1	3	3	
Requiring heavy repairs,.....			5	6	
Worn out,.....	1				
Total number of engines,					83

Number of cars owned by the companies August 31, 1860.

First class 8 wheel passenger cars in good repair,.....	43
“ “ “ “ wanting repair,	11
Second class 8 wheel passenger cars in good repair,	2
Baggage, express and mail cars in good repair,	15
“ “ “ “ wanting repair,	6
Covered freight and cattle 8 wheel cars in good repair,....	1252
“ “ “ “ “ wanting repair,....	81
Platform 8 wheel cars in good repair,	148
Other freight cars,	30
Gravel cars,	49
Derrick car,	1
Truck car,.....	1

TABLE F.

BUSINESS OF THE YEAR.

Miles run by passenger trains (five roads),.....	665.070
“ “ freight “	774.206
“ “ gravel and construction trains,	55.924
“ “ wood trains,.....	18.641
Number of through passengers carried in cars,	} 488.883
“ of way passengers,	
“ of miles traveled by passengers,.....	13.924.320
“ of tons of freight carried in cars one mile, .	31.244.977

TABLE G.

EXPENSES OF MAINTAINING ROADWAY AND REAL ESTATE.

For the year ending August 31st 1860.

Ordinary repairs of road bed and railway,	}	225.438 87
Extraordinary repairs of road bed and railway, including widening cuts and embankments, re- building and repairing masonry, ballasting, etc.,		
Insurance and taxes on real estate,		\$8.719 65
Repairs of bridges,		60.219 35
Other repairs,		108.631 60
Total,		\$420.774 54

COST OF REPAIRS OF MACHINERY.

Repairs of engines and tenders, cars, etc.,	\$266.231 85
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TABLE H.

COST OF OPERATING THE ROADS,

For the year, as reported.

Fuel, including cost of preparing the same, ...	\$135.569 10
Other expenses,	273.236 52

RECAPITULATION OF EXPENSES.

Maintaining roadway,	\$473.798 48
Repairs of machinery,	267.252 83
Operating,	408.815 50
Total,	\$1.149.866 81

TABLE I.

EARNINGS AND PAYMENTS.

Earnings.

From passengers,	\$487.015 59
From freight, ..	921.093 44
From other sources,	86.142 65

Payments other than for construction, excluding the Rutland and Washington, and Vermont Valley Companies.

For transportation expenses, viz :

For passenger business,	68.064 01
For freight business,	149.945 53
For other business,	506.287 70
For interest,	173.311 43
For carried to surplus fund,	70.477 59
For amount of surplus fund,	54.000 00
For other payments,	2.401 97

VALUE OF MATERIALS ON HAND.

Total, \$402.308 21

TABLE J.

ACCIDENTS.

It does not appear that any passenger has been killed or injured on any of the roads in the State the current year.

* Total number of persons killed, 5
Total number of persons injured but not killed, 3

* For particulars see reports of the companies.

DOCUMENTS ACCOMPANYING THE ANNUAL REPORT.

The following circular was sent to the several railroad companies in the State, or to officers of such companies, and to the lessees of the roads leased :

STATE OF VERMONT,

RAILROAD COMMISSIONER'S OFFICE, }
RUTLAND, 16th APRIL, 1860. }

To———

Desiring to make as complete a report as practicable of the condition and management of the railroads in this State, for the present year, I ask your attention to the following particulars :

Please state, with as much of detail as may be necessary, the kind of timber used in your bridges, for chords, braces, floor timbers, etc., whether your bridges were built of seasoned timber or otherwise — if different kinds of timber were used, which has proved the most durable and best adapted to the purpose—whether your bridges have been covered or not, and what is the condition of those covered and of those not covered—when they were built, and whether any or how many has it been necessary to rebuild in consequence of decay, and whether such bridges were covered or not. State also if you have found it necessary to rebuild or renew the principal timbers in your deck bridges in consequence of decay. State whether your bridges are built after Howe's patent, the common lattice or other pattern, and which from your experience proves best.

Please to state if you have adopted any means to relieve the shock of the engine and the train upon the joints of the rails, and if so, what has been the effect—if you have used wood chairs instead of iron, what has been the result, and what is the probable durability of such chairs—if you have tried the experiment of laying rails and breaking joints, that is, making a joint on one side opposite the centre of the rail on the other side, what has been the effect upon the joint and upon the opposite rail, and what effect upon the motion of the cars.

State what kinds of timber have been used on your road for cross-ties, and what has been the durability of each kind. If you have used "Burtonized" wood for cross-ties, please to state the results of such experiment and how long such ties have continued *good*. Please to state the expense of Burtonizing ties per hundred, and also what is the necessary cost of the whole apparatus for Burtonizing wood.

State what has been the annual expense of repairing and renewal of rails on your road, and what the length of time the rail has lasted without repair, and whether American or English iron is used, and the comparative value of each.

You will state if you employ a practical bridge builder on your road, to inspect and make promptly all needed repairs of bridges; if not, state what means you do adopt to secure the constant security of your bridges.

State the usual length of sections on your road, the number of men ordinarily on each section, and how often the section man is required to pass over and inspect his section, and what method you adopt to insure the prompt and faithful discharge of duties enjoined upon him.

State whether you limit the speed of trains between stations (and more particularly freight trains), and what means you adopt to insure obedience to regulations on the part of Conductors and Enginemen.

State what means are employed on your road, in case of accident to a moving train, to guard against collision from a following or advancing train.

State *all* the instances of passenger and freight trains being thrown off the track, and the cause of such accident.

These statements should be appended to and make part of your annual report.

With great respect, yours, etc.,

A. L. BROWN,

Railroad Commissioner.

The following is the form of the blanks sent to the several Railroad Companies for the present year :

ANNUAL REPORT OF THE——RAILROAD COMPANY FOR THE YEAR
ENDING AUGUST 31ST, 186

TABLE A.

STOCK AND DEBTS.

NOTE.—Under this head state the amount paid for interest, discount, &c.

TABLE B.

COST OF CONSTRUCTION.

For graduation and masonry,
For bridges,
For rails,
For chairs, spikes and cross ties,
For laying superstructure,
For passenger and freight stations, buildings and fixtures,
For engine and car houses, machine shops, machinery and fixtures,
For land damages and fences,
For engineering,
Laborers not included in engineering,

NOTE.—These items are intended to embrace the whole cost of construction up to the closing of the construction account.

State, also, the progress of the work, cost of graduation, superstructure, and all incidental expenses on any extension or alteration of road, to Aug 31, 1860.

Also state the amount paid for interest, discount, &c., if charged to construction account.

TABLE C.

EQUIPMENT.

For locomotive engines and fixtures, (including snow plows.)
For passenger and baggage cars,
For freight cars,
Gravel cars,
Hand cars and repair cars,
Tools, &c.,
Total cost of equipment,

Total cost of road and equipment,

TABLE D.

ESTIMATED VALUE OF THE PROPERTY OF THE COMPANY.

TABLE E.

CHARACTERISTICS OF ROAD.

Length of road,
 " " completed,
 " side tracks,
 Weight of rail per yard,
 Width of earth cuts at grade,
 " rock " "
 Slope of earth cuts.
 " rock "
 Width of embankments at grade,

CHARACTER AND LENGTH OF BRIDGING.

	No. of structur's	No. of Spans.	Length of bridging in feet.
Trestle bridging,			
Truss bridging, 50 feet span and under,			
Truss do., from 50 to 100 feet span,			
Truss do. from 100 to 150 feet span,			
Truss do. 150 feet span and over,			
Draw bridges,			
Total,			

Number of road crossings at grade,
 Number of road crossings above and below grade,
 Number of cross ties per mile,
 Average length and size of cross ties,
 Kinds of timber used for cross ties,
 Chairs, number per mile,
 Wrought or cast iron,
 Wood,
 Average weight of cast iron chairs,
 Average weight of wrought iron chairs,
 Whole number of single switches on main track,
 Kind of switches used,

NOTE.—Where *Chairs* made of wood are used, give the length of time used and the probable durability of such chairs.

State the durability of the different kinds of cross ties used.

State also the kinds of timber used for bridges, in the several parts—chords, braces, floor timbers, &c., and whether well seasoned or not, at the time of building, and whether bridges were covered or not.

GRADIENTS AND ALIGNMENT.

Level, number of miles,
 From 10 to 20 feet, number of miles,
 From 20 to 30 feet, number of miles,
 From 30 to 40 feet, number of miles,
 From 40 to 50 feet, number of miles,
 From 50 to 60 feet, number of miles,
 From 60 to 70 feet, number of miles,
 Maximum grade,
 Amount of straight line, miles,
 Amount of curved line, miles,
 Maximum radius,
 Minimum radius,
 Sum of ascents going in one direction,
 Sum of ascents going in opposite direction,
 Height of termini and summit above tide water.

BUILDINGS AND FIXTURES.

Passenger houses,
 Freight houses,
 Engine houses,
 Repair shops,
 Water stations,
 Dwellings,
 Wood sheds,
 Turn tables,

Other buildings, as follows :

EQUIPMENT.

Number of locomotives owned by the Company on the 31st day of August, 18 .

	Under 16 tons.	16 to 20.	20 to 25.	25 to 30.	30 tons and over.
In good repair,					
Requiring slight repair,					
Requiring heavy repairs,					
Worn out,					

Number of cars owned by the company, August 31, 18 .
 First class 8 wheel passenger cars in good repair,
 First class 8 wheel passenger cars wanting repair,
 Second class 8 wheel passenger cars in good repair,
 Second class 8 wheel passenger cars, wanting repair,
 Baggage, express and mail cars in good repair,
 Baggage, express and mail cars wanting repair,
 Covered freight and cattle 8 wheel cars in good repair,
 Covered freight and cattle 8 wheel cars wanting repair,
 Platform 8 wheel cars in good repair,
 Other freight cars,
 Gravel cars,

TABLE F.

BUSINESS OF THE YEAR.

Miles run by passenger trains,
 Miles run by freight trains,
 Miles run by gravel and construction trains,
 Miles run by wood trains,
 Number of through passengers carried in cars,
 Number of way passengers,
 Number of miles traveled by way passengers,
 Number of miles traveled by passengers (other than employees)
 having *passes*,
 Number of tons of freight carried in cars one mile,
 Average rate of speed of ordinary passenger trains,
 Average rate of speed of express trains,
 Average rate of speed of freight trains,
 Rate of fare charged first class through passengers per mile,
 Rate of fare charged first class way passengers per mile,
 Average rate of fare charged second class passengers per mile,
 Rate per ton per mile charged on 1st class through freight,
 Rate per ton per mile charged on 2d class through freight,
 Rate per ton per mile charged on 3d class through freight,
 Rate per ton per mile charged on 4th class through freight,
 Rate per ton per mile charged on 1st class way freight,
 Rate per ton per mile charged on 2d class way freight,
 Rate per ton per mile charged on 3d class way freight,
 Rate per ton per mile charged on 4th class way freight,

NOTE.—State the whole number of tons of through freight. State the whole number of tons of way freight.

TABLE G.

EXPENSES OF MAINTAINING ROADWAY AND REAL ESTATE,

For the year ending August 31, 18

Ordinary repairs of road bed and railway,
Extraordinary repairs of road bed and railway, including widening cuts and embankments, rebuilding and repairing masonry, ballasting, &c.,
Cost of iron rails used in repairs,
Number and weight of chairs,
Weight of spikes,
Cost of relaying rails.
Cost of repairs of iron rails,
Number and kind of cross ties used for renewals,
Cost of same,
Cost of relaying,
Insurance and taxes on real estate,
Repairs of bridges,
" stations,
" fences,
" masonry,
Total,

NOTE.—State the number and length of new bridges, with cost per lineal foot, and whether built to supply decayed ones or those destroyed by fire or other casualty.

COST OF REPAIRS OF MACHINERY.

Repairs of engines and tenders,
Depreciation of the same,
Repairs of passenger and baggage cars,
Depreciation of the same,
Repairs of freight cars,
Depreciation of the same,
Repairs of tools and machinery in shops,
Oil used about workshops,
Fuel,
Waste,
Other items in detail as follows :
Total,

TABLE H.

COST OF OPERATING THE ROAD.

For the year ending August 31st, 18 .

Fuel, including cost of preparing the same,
Number of cords of wood used by locomotives,
Number of cords of wood used at stations,
Number of cords lost by fire,
Number of gallons of oil,
Number of pounds of waste,
Cost of oil and waste for engines and tenders,
“ “ “ passenger and baggage cars,
“ “ “ freight cars,
Loss and damage of goods,
Loss and damage of baggage,
Damages for injuries to persons,
Damages to property, including fire, and animals killed on road,
Office expenses and stationery,
Number of agents,
Number of clerks,
Labor, loading and unloading freight,
Porters and watchmen,
Switchmen,
Wood and water station attendance,
Conductors and baggage men,
Brakemen,
Enginemen and firemen,
For salaries of Trustees, President, Directors, Secretaries, Treasurer and Superintendent,
For printing, stationary and office expenses,
For law expenses,
Other expenses in detail as follows :
Actual cost of transporting freight, per ton per mile,
Actual cost of transporting passengers per mile,
Total,

NOTE.—State under “law expenses,” if a Solicitor is employed at a salary :
and state how and where agents are employed.

RECAPITULATION OF EXPENSES.

Maintaining roadway,
Repairs of machinery,
Operating,
Total,

TABLE I.

EARNINGS, RECEIPTS AND PAYMENTS.

Earnings.

From passengers,
From freight,
From other sources,

Receipts.

From passengers,
From freight,
From other sources,

Payments other than for construction.

For transportation expenses, viz :

For passenger business,
For freight business,
For other business,
For interest on funded debt,
For interest on floating debt,
For dividends,
For carried to surplus fund,
For amount of surplus fund,

VALUE OF MATERIALS ON HAND.

Wood, cords of,
Oil, gallons of.
Waste, pounds of,
Iron rails, tons of, old,
Iron rails, tons of, new,
Chairs, pounds of,
Spikes, pounds of,
Ties, number of,
Iron and other metals, unwrought,
* Iron and other metals, worked and partly worked,
Lumber,

Other items specified as follows :

DETAILS OF EARNINGS, FOR THE YEAR ENDING AUGUST 31ST, 186

SOURCE.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.	JANUARY.	FEBRUARY.
Through passengers,						
Way passengers,						
Through freight,						
Way freight,						
Express,						
Transport of mails,						
Use of engines,						
Use of cars,						
Rent,						
Other earnings specified in detail as follows :						

DETAILS OF EARNINGS, CONTINUED.

SOURCE.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.
Through passengers,						
Way passenger,						
Through freight,						
Way freight,						
Express,						
Transport of mails						
Use of engines,						
Use of cars,						
Rent,						
Other earnings specified in detail as follows :						

TABLE J.

ACCIDENTS.

The number of persons injured in life or limb, and the cause thereof, and whether passengers or persons employed.

Whether any such accidents have arisen from carelessness or negligence of any person in the employment of the corporation, and whether such person is retained in the service of the corporation.

	EMPLOYEES.		OTHERS.	
	Killed.	Injured.	Killed.	Injured.
Trains thrown from the track,...				
Struck by bridge, while on top of freight car,				
Run over while walking on track,				
Injured at road crossing.....				
Total,				

Total number of persons killed,

Total number of persons injured but not killed,

In addition to which must be given a statement of the date of each accident, the place where it occurred, the train, the cause and the extent of the injuries inflicted upon each person, and the name of such person.

TABLE K.

EMPLOYEES AND COMPENSATION.

OFFICERS OF THE COMPANY.

SALARIES.

Trustees,
 President,
 Superintendent,
 Treasurer,
 Solicitor,
 Agents,

STATE OF VERMONT, }
COUNTY, SS. }

depose and say
that the facts set forth, and statements made in the foregoing
report, which has been signed by are true and correct accord-
ing to the best of knowledge, information and belief.

Signed,

Subscribed and sworn to before me this day of 18

ANNUAL REPORT

OF THE ATLANTIC AND ST. LAWRENCE RAILROAD COMPANY FOR
THE YEAR ENDING DECEMBER 31st, 1859.

TABLE A.

STOCK AND DEBTS.

Capital stock—authorized by charter,	\$4,000,000
The amount paid in is, ..	2,494,900
Funded debt,	3,480,000
Floating debt,	nothing
Interest six per cent.	

TABLE B.

COST OF CONSTRUCTION.

Two-thirds of the road were built at a stipulated price per mile,
consequently cannot be apportioned.

Total cost, \$6,697,995 64

TABLE C.

EQUIPMENT.

For locomotive engines and fixtures (including snow plows),	\$891,479 27
For passenger and baggage cars,	60,059 70
For freight cars,	} 409,532 00
Gravel cars, ..	
Hand cars and repair cars,	
Total cost of equipment,	\$861,070 97
Total cost of road and equipment,	\$7,559,066 61

TABLE D.

ESTIMATED VALUE OF THE PROPERTY OF THE COMPANY.

No valuation of the property has been made, liberal expenditures being made by renewals and repairs to keep it all in good condition.

TABLE E.

CHARACTERISTICS OF ROAD.

Length of road,.....	149 miles.
“ “ completed,.....	149 “
“ side tracks,	about $18\frac{1}{2}$ “
Weight of rail per yard,.....	63 lbs.
Width of earth cuts at grade,.....	22 feet.
“ rock “	22 “
Slope of earth cuts,.....	$1\frac{1}{2}$ to 1
“ rock “	$1\frac{1}{4}$ to 1
Width of embankments at grade,.....	15 feet

CHARACTER AND LENGTH OF BRIDGING.

	No. of structur's	No. of Spans.	Len'th of bridging in feet.
Pile bridging, with one draw,.....	1		1519
Truss do., 50 feet span and under,.....	10	10	400
Truss do., from 50 to 100 feet span,	2	2	120
Truss do., from 100 to 150 feet span, ...	14	14	1750
Stone arch bridges (see note below),....	2	2	120
Totals,			

NOTE. In addition to the above bridges, there are on the line 16 iron bridges, 3 of which are 300 feet each in length, in spans of 75 feet; one over the Connecticut, one over Wild River and the other over Presumpscot River,—whole length of iron bridges 1510 feet.

Number of road crossings at grade,.....	63
Number of road crossings above and below grade,.....	6
Number of cross ties per mile,	2400
Average length and size of cross ties,.....	9 feet by 6 inch face,
Kinds of timber used for cross ties, cedar, hemlock and hackme- tack.	
Chairs, number per mile,	about 600
Wrought or cast iron,	both,—at present time wrought.
Wood,	none.
Average weight of cast iron chairs,.....	about 20 lbs.
“ wrought “ ...	about 16 lbs.
Whole number of single switches on main track,.....	about 100
Kind of switches used,.....	lever.

GRADIENTS AND ALIGNMENT.

Level, number of miles,.....	} 97.27 miles.
From 10 to 20 feet number of miles,.....	
From 20 to 30 feet, number of miles,....	17.30 “
From 30 to 40 feet, “ “ 	16.14 “
From 40 to 50 feet, “ “ 	} 18.34 “
From 50 to 60 feet, “ “ 	
From 60 to 70 feet, “ “ 	none.
Maximum grade,	60 feet.
“ radius,.....	5730 feet.
Minimum radius,	955 feet.
Sum of ascents going in one direction, north over 5 feet grade,..	65.89 miles.
Sum of ascents going in opposite direction, south over 5 feet grade,.....	27.10 “

The charter of the Atlantic and St. Lawrence Railroad, within the State of Vermont, extends from the Connecticut River, at Bloomfield, to the Roadway line in Norton. But the entire line from Portland to Montreal is worked in divisions, of which the point of junction is at Island Pond, in Brighton.

BUILDINGS AND FIXTURES.

Passenger houses,	29
Freight houses,.....	22
Engine houses,.....	8
Repair shops, ..	6
Water stations,.....	17
Dwellings,.....	2
Wood sheds,.....	26
Turn tables,	10

Other buildings as follows :

Hotels,	2
Store houses on wharves in Portland for ocean and Boston steamers,	10

EQUIPMENT.

Number of locomotives owned by the company on the 31st day
of December, 1859.

	Under 16 tons.	16 to 20.	20 to 25.	25 to 30.	30 tons and over.
In good repair,.....			13	21	2
Requiring slight repair,.....		1	2		
Requiring heavy repairs,.....				3	
Worn out,.....					

Number of cars owned by the company, Dec. 31, 1859,....	565
First class 8 wheel passenger cars in good repair,	17
Baggage, express and mail cars in good repair,	7
Covered freight and cattle 8 wheel cars, in good repair,..	} 541
“ “ “ “ “ wanting “ ..	
Platform 8 wheel cars, in good repair,.....	

TABLE F.

BUSINESS OF THE YEAR.

Miles run by passenger trains,	169.179
“ “ freight trains,	312.088
“ “ gravel and construction trains,	} 214.616
“ “ wood trains,	
Number of through passengers carried in cars, ..	} 149.402
“ of way “	
Number of tons of freight carried in cars,	223.325½
Average rate of speed of ordinary passenger trains, including stops,	23 miles.
Average rate of speed of express trains, including stops, 26 “	
“ “ freight “ “ “ 13 “	
Rate of fare charged first class through passengers, per mile,	2¼ cts.
Rate of fare charged first class way passengers, per mile,	3 cts.

TABLE G.

EXPENSES OF MAINTAINING ROADWAY AND REAL ESTATE.

Books so kept cannot be answered in detail.

COST OF REPAIRS OF MACHINERY.

Books so kept cannot be answered in detail.

TABLE H.

COST OF OPERATING THE ROAD.

For the year ending August 31st, 1860.

Books not classified; answers cannot be given.

Total, \$462.382 46

TABLE I.

EARNINGS, RECEIPTS AND PAYMENTS.

Earnings.

From passengers,	\$147,940 14½
From freight,.....	442,307 53
From other sources, .	16,867 48

VALUE OF MATERIALS ON HAND.

Fuel,	\$33,840 78
Stores,	49,220 49

The statements of receipts, expenses and materials, apply to the Portland Division, extending from Island Pond to Portland.

TABLE K.

EMPLOYEES AND COMPENSATION.

The employees of the company, being employed upon the two entire divisions of the road, one south of Island Pond, extending to Portland; the other north of Island Pond, extending to the boundary line and Montreal, no specific statement can be made under this head of inquiry, as applicable to the State of Vermont.

The Directors of the Atlantic and St. Lawrence Railroad Company on presenting this, their annual report, beg leave to offer a copy of their statement made to your predecessor the last year, which is as follows:

"The Directors of the Atlantic and St. Lawrence Railroad Company, in making their answers to the foregoing questions, beg to state that, their road being under lease to the Grand Trunk Railway Co. of Canada, as set forth in a former report, and being under the exclusive management of that company, their information upon which these statements are based, is derived partly from their own records and files, but principally from the officers and agents of that company at Portland, and from their books and accounts there kept; and though they are not personally cognizant of many of the facts, and state them from information thus derived, and not as wholly within their own knowledge, they have no doubt of the correctness of the statements made.

As the books of the company have been from the first, and are now kept in a method to conform to the requirements of another jurisdiction, very many of the questions in the tables cannot be answered; and such as are answered must apply to the whole line of road from Portland to the line of Vermont. Answers are, however, given as fully as the information in their possession will admit of. The same course, substantially, has been adopted by the directors in their reports to the Vermont authorities during the time their road has been under lease, and they trust that in this case it will be satisfactory. They have no doubt, if more explicit answers are required upon any matter, it will be readily furnished by the lessees of the road, so far as it is in their power so to do, intimation to that effect being given to them, or to the authorized agents or officers on the line."

In addition they would state in reply to the circular of the commissioner of the 16th of April, 1860, that within the past five years, nearly or quite all the bridges, except the pile bridge over the Back Cove outlet at Portland, have been rebuilt—sixteen of which are of iron and two of stone arches—the remainder of wood;—most of the principal wooden bridges are built after McCallum's patent, preference being given by the engineer of the company to that plan over Howe's truss. The timber used is white pine.

In relaying the rails the company have adopted the plan of fishing the joints, which promises to save much wear of the rails

and of the machinery. The company now use American rails.

The company have not Burtonized any of the timber used by them.

A practical bridge builder is employed on the road, whose duty it is to inspect and promptly make all needed repairs.

The length of sections on the road is about four and a half miles. Four men in summer and three in winter are employed on each section. It is the duty of the road master, who has charge of fifty miles, to pass over the road frequently, and of the foremen to go over their sections at least twice each day.

The speed of all trains is limited between stations by the time tables and by special regulations, which both engineers and conductors are bound to observe.

To prevent collision between trains in case of accident or detention of any train, men are sent forward and back with signals to any approaching train.

Fortunately no train has been thrown from the track during the year within the State of Vermont.

P. BARNES,

Vice President At. & St. Law. R. R. Co.

STATE OF MAINE, }
CUMBERLAND COUNTY, ss. }

I, Phineas Barnes, depose and say that the facts set forth, and statements made in the foregoing report, which has been signed by me, are true and correct according to the best of my knowledge, information and belief.

Signed,

P. BARNES.

Subscribed and sworn to before me, this 15th day of September, 1860.

E. F. BEALE,

Justice of the Peace, throughout the State.

ANNUAL REPORT

OF THE PASSUMPSIC AND CONNECTICUT RIVERS RAILROAD COM-
PANY FOR THE YEAR ENDING AUGUST 31ST, 1880.

TABLE A.

STOCK AND DEBTS.

Capital stock as per Charter,.....\$3,000,000

NUMBER OF SHARES.

Six per cent. guaranteed stock,.. 49,200 shares.

“ “ “ preferred,..... 833,000 “

Stock not preferred, par value, \$100.00..... 398,200 “

1,280,400 “

Funded debt,.....\$800,000 00

Average rate of interest on funded debt,..... 6 per cent.

TABLE B.

COST OF CONSTRUCTION.

For graduation and masonry,.....\$665,939 35

For bridges,..... 185,252 47

For rails,..... } 467,054 59

For chairs, spikes and cross-ties,..... }

For laying superstructure,..... }

For passenger and freight stations, buildings and

fixtures, 57,346 85

For land, land damages and fences,..... 109,790 39

For engineering,..... 28,747 96

The company are now grading their road from Barton to Can-
ada Line.

TABLE C.

EQUIPMENT.

For locomotive engines and fixtures, (including snow plows,).....	\$79,328 76
For Passenger and baggage cars,.....	40,595 00
For freight cars,.....	} 73,498 00
Gravel cars,.....	
Hand cars and repair cars,.....	
Tools, &c.,.....	
Total cost of equipment,.....	\$193,421 76

TABLE E.

CHARACTERISTICS OF ROAD.

Length of road,.....	110 miles.
“ “ completed,....	90 “
Weight of rail per yard,....	56 pounds.
Width of earth cuts at grade,.....	20 feet at base line.
Slope of earth cuts,.....	1½ base to 1 foot rise.
Width of embankments at grade,.....	15 feet.

CHARACTER AND LENGTH OF BRIDGING.

	No. of structures	No. of Spans.	Length of bridging in feet.
Trestle bridging,.....	6	1	150
Truss bridging, 50 feet span and under,	12	1	350
Truss do. 50 to 100 ft. span,.....	1	1	80
Truss do. from 100 to 150 feet span,....	6	2	1168
Truss do. 150 feet span and over,....	2	3	356
Draw bridges,.....			
Totals,.....	27	8	2104

Number of road crossings above and below grade,.....	6
Number of cross ties per mile,.....	2000
Average length and size of cross ties, 7 to 7½ feet, 6 by 8 inches.	
Kinds of timber used for cross ties, tamaracks, cedar, hemlock and chestnut.	
Chairs, number per mile,.....	690
Wrought or cast iron,.....	east.
Wood,.....	690
Average weight of cast iron chairs,.....	17 lbs.
Average weight of wrought iron chairs,.....	none.
Whole number of single switches on main track,.....	50
Kind of switches used,.....	target.

GRADIENTS AND ALIGNMENT.

Maximum grade,.....	.52 8-10 feet.
---------------------	----------------

BUILDINGS AND FIXTURES.

Passenger houses,.....	4
Freight houses,.....	19
Engine houses,.....	3
Repair shops,.....	3
Water stations,.....	7
Dwellings,.....	8
Wood sheds,.....	16
Turn tables,.....	2

Other buildings as follows :

Car houses,.....	3
1 building rented for store and occupied as general offices.	

EQUIPMENT.

Number of locomotives owned by the Company on the 31st day of May, 1860.

	Under 16 tons.	16 to 20.	20 to 25	25 to 30	30 tons and over.
In good repair,.....			5	1	
Requiring heavy repairs,.....			1	1	

Number of cars owned by the company May 31, 1860.

First class 8 wheel passenger cars in good repair,.....	5
“ “ “ “ “ “ wanting repair,.....	3
Baggage, express and mail cars in good repair,.....	3
“ “ “ “ “ “ wanting repairs,.....	2
Covered freight and cattle 8 wheel cars in good repair,....	106
“ “ “ “ “ “ wanting repair,.....	20
Platform 8 wheel cars in good repair,.....	35
Other freight cars,.....	8
Gravel cars,.....	14

TABLE F.

BUSINESS OF THE YEAR ENDING MAY 31ST, 1860.

Miles run by passenger trains,.....	59.580
“ “ freight trains,.....	62.620
“ “ gravel and construction trains,.....	2.532
“ “ wood trains,.....	1.019
Number of through passengers carried in cars,.....	} 60.237
Number of way passengers,.....	
Average rate of speed of ordinary passenger trains, including stops,.....	23 miles per hour.
Average rate of speed of freight trains, including stops,.....	10 miles per hour.
Rate of fare charged first class through passengers per mile,.....	3 cents.
Rate of fare charged first class way passengers per mile,.....	3½ cents.
Rate per ton per mile charged on 1st class thro' freight,.....	4½ cents.
“ “ “ “ 2d “ “ “ “	3 ⁵⁵ / ₁₀₀ cents.
“ “ “ “ 3d “ “ “ “	3 ⁹⁰ / ₁₀₀ cents.
“ “ “ “ 4th “ “ “ “	2 ³ / ₄ cents.
“ “ “ “ 1st “ way “ “	} 5 cents.
“ “ “ “ 2d “ “ “ “	
“ “ “ “ 3d “ “ “ “	
“ “ “ “ 4th “ “ “ “	

RECAPITULATION OF EXPENSES.

Maintaining roadway,.....	\$33.594 24
Repairs of machinery,.....	40.320 12
Operating,.....	49.112 77
Total,.....	<u>\$123.027 13</u>

TABLE I.

EARNINGS, RECEIPTS AND PAYMENTS

For the year ending May 31st, 1860.

Earnings.

From passengers,.....	\$75.090 34
From freight,.....	101.352 55
From other sources,.....	11.203 64
	<u>\$187.646 53</u>

Receipts.

From passengers,.....	\$75.090 34
From freight,.....	101.352 55
From other sources,.....	11.203 64
	<u>\$187.646 53</u>

Payments other than for construction.

For transportation expenses, viz :

For passenger business,.....	\$8.423 13
“ freight “	15.519 72
“ interest on funded debt,.....	48.000 00
“ carried to surplus fund,.....	16.000 00
“ amount of “ “	54.000 00

Wood, cords of.....	9.448 $\frac{1}{2}$	}	\$24.587 02
Oil, gallons of.....	72		
Waste, pounds of.....	1.729		
Iron rails, tons of, old.....	80 $\frac{1}{3}$		
“ “ “ new.....	50		
Spikes, pounds of.....	2.760		
Ties, number of,	1.00		
Other items specified as follows:			
Cedar posts,.....	2.500		
Coal, tons of,.....	55 $\frac{1}{2}$		

DETAILS OF EARNINGS, FOR THE YEAR ENDING MAY 31ST, 1860.

SOURCE.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.	JANUARY.	FEBRUARY.
Through passengers,.....						
Way ".....						
Through freight, lbs.,.....	4,706.483	6,636.098	6,369.009	5,078.293	4,314.081	3,632.038
Way ".....						
Express,.....	\$166 67	\$166 67	\$166 66	\$166 67	\$166 67	\$166 66
Transport of mails,.....	695 84	695 83	695 83	695 84	695 83	695 83
Use of engines,.....						
Use of cars.....	Included	in freight	account			
Rent,.....	\$71 13	\$71 13	71 13	71 13	71 14	71 14
Other earnings specified in detail as follows:.....						
Total,						

DETAILS OF EARNINGS, CONTINUED.

SOURCE.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.
Through passengers,.....						
Way passengers,.....						
Through freight, lbs.....	4.146.511	4.274.014	4.852.624	4.915.310	3.505.741	4.315.830
Way freight,.....						
Express,.....	\$166 67	\$166 67	\$166 66	\$166 67	\$166 67	\$166 66
Transport of mails,.....	695 84	695 83	695 83	695 84	695 83	695 83
Use of engines,.....						
Use of cars,.....	included	in freight	account.			
Rent,	\$71 14	71 14	71 14	71 14	71 14	71 14
Other earnings specified in detail as follows:.....						
Total,....						

Lumber down Connecticut River, 4.559.837 feet.

The above is exclusive of way freight.

TABLE J.

ACCIDENTS.

Total number of persons injured and not killed, 1

Charles B. Pike, temporary fireman, was thrown from the locomotive August 9th, 1859, in consequence of a large stone being placed upon the track in St. Johnsbury on Butter's meadow. Extra passenger train about midnight. Leg badly injured, subsequently amputated. Patient recovered.

TABLE K.

EMPLOYEES AND COMPENSATION.

Lucius Gilmore, General Freight Agent, . . .	\$800 00	per year.
Nathaniel P. Lovering, Jr., Ticket Master, . .	600 00	"
Hubbard Hastings, Cashier and Accountant, . .	600 00	"
Horace A. Alden, Master Mechanic,	800 00	"
Daniel M. Ingham, Road Master,	2 50	per day.
Amos Barnes, Passenger Conductor,	55 00	per mth.
H. A. Bigalow, do. Engineer,	55 00	"
S. J. Wilson, do. do.	55 00	"
Allen Burroughs, do. Firemen,	35 00	"
O. D. Parker, do. do.	35 00	"
John McCormick, Baggage Master,	45 00	"
William M. Rollins, Passenger Brakeman, . .	35 00	"
Hiram Wilkins, Freight Conductor,	50 00	"
William M. Chace, do. do.	50 00	"
B. W. Spalding, Cattle do.	45 00	"
Alanson Burt, Freight Engineer,	50 00	"
Henry C. Mower, do.,	50 00	"
Winthrop Cline, Freight Fireman,	30 00	"
Ezra W. Smith, do. do.	30 00	"
David S. Elkins, do. Brakeman,	35 00	"
John Scott, do. do.	35 00	"
Charles H. Fletcher, Station Agent,	400 00	per year.
Joel Trull, do.	20 00	per mth.
Jacob Ida, do.	20 00	"
F. M. Sherman, do.	1 00	per day.
S. S. Clarke, do.	1 25	"

Harry Moore, Station Agent,	1 00	per day.
J. E. Dimick, do.	1 50	"
Allen Goold, do.	1 25	"
Stebbins Andrus, do.	2 25	"
George W. Brown, do.	1 00	"
D. W. Closson, do.	1 25	"
A. F. Thomas, do.	1 00	"
H. F. Reynolds, do.	1 00	"
Lemuel R. Jenne, do.	1 25	"
D. A. Richardson, do.	1 25	"
Cyrus Gage, do.	175 00	per year.
Henry P. Alden, Freight Clerk and accountant,	400 00	"
James Gaffany, " Delivery,	35 00	per mth.
Peter Higgins, " Laborer,	1 12½	per day
John F. Hayes, " "	1 00	"
L. C. Woodbury, Car Ins., Switchman, etc.,	1 42	"
O. M. Badger, Car Inspector,	1 25	"
Lafayette Soper, Car Ins., Switchman, etc.,	1 25	"
W. R. Lyman, " " "	1 25	"
Wm. D. Carleton, Switchman etc.,	90	"
George Wilson, Watchman,	1 00	"
Daniel Foster, "	1 00	"
Wm. A Chapin, Machinist,	1 92	"
J. J. Robinson, "	1 62	"
A. C. Dickerman, "	1 62	"
Charles H. Walter, "	1 42	"
George S. Kilby, "	1 42	"
Hiram Caswell, Locomotive Inspector and spare Engineer,	1 50	"
James B. Carpenter, Laborer,	1 33½	"
Ira S. Bemis, Stationary Engineer, etc., ..	1 25	"
Horace S. Lee, apprentice,	230 00	per year.
Wm. W. Mack, Carpenter,	2 00	per day.
George B. Tracy, "	1 50	"
Israel A. Curtis, "	1 42	"
C. R. Keech, "	1 33	"
J. R. Crane, "	1 33	"
J. R. Farr, "	1 33	"
C. O. Lake, "	1 33	"
Samuel A. Wright, Painter,	1 75	"
Horace G. Wright, "	1 17	"

J. R. Baldwin, Master Blacksmith,	2 00	per day.
Jesse Cheeney, Blacksmith,	1 50	"
George Bennett, Jr., "	1 25	"
Justus Burnham, Helper,	1 12½	"
M. A. Harvey, "	1 12½	"
21 Foremen of Sections, average,	1 11½	"
35 2d hands " "	88	"
John M. Hoyt, Wood Agent,	2 00	"
5 Wood Laborers, average,	1 06	"

OFFICERS OF THE COMPANY.

HENRY KEYES, *President and Agent, Newbury.*JOSIAH STICKNEY, *Vice President, Boston.*NATHANIEL P. LOVERING, *Treas. Boston.*ELIJAH CLEVELAND, *Clerk, Coventry.*

SALARIES.

Agent,	\$1200 00
Treasurer,	1500 00

STATE OF VERMONT, }
CALEDONIA COUNTY, ss. }

ST. JOHNSBURY, SEPTEMBER 21st, 1860.

I, Henry Keyes, President, depose and say that the facts set forth, and statements made in the foregoing report, which has been signed by me, are true and correct according to the best of my knowledge, information and belief.

Signed, HENRY KEYES, *President.*

Subscribed and sworn to before me, this 21st day of September, A. D. 1860.

HUBBARD HASTINGS, *Master in Chancery.*

ANNUAL REPORT

OF THE RUTLAND AND BURLINGTON RAILROAD COMPANY, FOR
THE YEAR ENDING AUGUST 31ST, 1890.

TABLE A.

STOCK AND DEBTS.

Capital stock,.....	\$1.242.500	00
Eight per cent. preferred stock,.....	382.700	00
Six per cent. preferred stock,.....	608.176	31
	<u>2.233.376</u>	31

FUNDED DEBT.

7 per cent. first mortgage bonds,....	1.800.000	00
7 per cent. second mortgage bonds,...	937.500	00
7 per cent. third mortgage bonds,....	435.050	10
	<u>3.172.550</u>	10
6 per cent. floating debt,.....	979.119	15
	<u>\$6.385.045</u>	56

TABLE B.

COST OF CONSTRUCTION.

For graduation and masonry,.....	2.358.323	76
For bridges,.....	116.669	93
For rails,.....	} 949.745	67
For chairs, spikes and cross-ties,.....		
For laying superstructure,.....		
For passenger and freight stations, buildings, &c.,	} 238.652	75
For engine and car houses, machine shops, machinery and fixtures,.....		
For land, land damages and fences,..	234.414	82
For engineering,.....	.91.901	12
	<u>\$3.989.708</u>	05

TABLE C.

EQUIPMENT.

	Corporation.	Trustees.
For locomotive engines and fixtures, (including snow plows,).....	175.164 34	36.853 81
For passenger and baggage cars,....	366.640 88	22.351 24
For freight cars,... ..		
Gravel cars,.....		
Hand cars and repair cars,.....		
Tools, &c.,	14.470 34	2.263 00
Total cost of equipment,.....	556.275 56	
	3.989.708 05	
Total cost of road and equipment,..	\$4.545.983 61	\$61.468 05

TABLE E.

CHARACTERISTICS OF ROAD.

Length of road,.....	119 miles, 2846 feet.
“ side tracks,.....	16 miles.
Weight of rail per yard,.....	60 pounds.
Width of earth cuts at grade,.....	20 to 30 feet.
Width of rock cuts at grade,.....	20 feet.
Slope of earth cuts,.....	1½ to 1 foot.
“ rock “	1 to 12 feet.
Width of embankments at grade,.....	13 to 18 feet.

CHARACTER AND LENGTH OF BRIDGING.

	No. of Struct'rs	No of Spans.	Length of bridging in feet.
Trestle bridging,.....	4	12	157
Truss bridging, 50 feet span and under,	5	5	197
Truss do. from 50 to 100 feet span,...	11	12	852
Truss do. from 100 to 150 feet span,..	18	29	3523
Truss do. 150 feet span and over,.....	4	4	677
Draw bridges,.....	none.		
Totals,...	42	62	5406

Number of road crossings at grade,	85
Number of road crossings above and below grade,	16
Number of cross ties per mile,	2112
Average length and size of cross ties,	7 1-2 feet.
Kinds of timber used for cross ties, chestnut, tamarack and ash.	
Chairs, number per mile,	588
Wrought or cast iron,	mostly cast, a few wrought
Wood,	none.
Average weight of cast iron chairs,	25 lbs.
Average weight of wrought iron chairs,	12 lbs.
Whole number of single switches on main track,	64
Kind of switches used,	common.

There is on the Road 5406 feet of Bridging, of which 157 feet is trestle bridging—the balance is “hem truss.” In building these bridges, pine was used for the bottom chords, and Spruce for the top chords and braces. They were used some months before being covered and in consequence of this delay three deck bridges became unsafe from decay and have been rebuilt, besides these the present managers have rebuilt one through and five small low truss bridges, rendered necessary by decay of the old structures, also one deck, and one long truss bridge, in place of others destroyed by fire. No timber has been used in building these bridges but the best southern pine for chords and floor beams, and northern pine for braces, they are built in a through and substantial manner. We employ at all times a practical and experienced bridge builder to inspect and make all needed repairs to bridges.

The track is under the immediate supervision of a road-master and assistant, and is divided into sections of about five miles each, on which four or five men are ordinarily employed. The track is inspected every morning, before the passage of trains, and as often through the day as circumstances may require. For cross ties, we use chestnut, tamarack, and ash timber, with mostly cast iron chairs to secure the rails—a few wrought chairs have been used during the past year. We have laid several miles of track by breaking joints, and thus far it has proved very satisfactory.

GRADIENTS AND ALIGNMENT.

The books which would enable us to answer the questions under this head, were destroyed by fire.

BUILDINGS AND FIXTURES.

Passenger houses,..	30
Freight houses,.....	6
Engine houses,.....	5
Repair shops,.....	3
Water stations,.....	16
Dwellings,.....	4
Wood sheds,.....	16
Turn tables,.....	4
Other buildings, as follows :	
Rail repair shops.....	2

EQUIPMENT.

Number of locomotives owned by the Company on the 31st day of August, 1860.

	Under 16 tons.	16 to 20.	20 to 25.	25 to 30.	30 tons and over.
In good repair,.....		9	12		
Requiring slight repair,.....	1	1	2		
Requiring heavy repairs,.....			1		

Number of cars owned by the company, August 31, 1860.

First Class 8 wheel Passenger cars in good repair,.....	14
First class 8 wheel passenger cars wanting repair,.....	2
Second class 8 wheel passenger cars in good repair,.....	2
Baggage, express and mail cars in good repair,.....	5
Covered freight and cattle 8 wheel cars, in good repair,...	526
Covered freight and cattle 8 wheel cars, wanting repair,....	11
Platform 8 wheel cars, in good repair,.....	61
Derrick cars,.....	1
Wreck cars,.....	1

TABLE F.

BUSINESS OF THE YEAR.

Miles run by passenger trains,.....	166.164
Miles run by freight trains,.....	183 276
Miles run by gravel and construction trains,.....	35.390
Miles run by wood trains,.....	12.105
Number of through passengers carried in cars,.....	43.352
Number of way passengers,.....	87.781
Number of miles traveled by way passengers,.....	2.093.934
Number of miles traveled by through passengers,....	2.690.092
Number of miles traveled by passengers (other than employees) having <i>passes</i> ,.....	4.784 026
Number of tons of freight carried in cars one mile,.	5.530.515
Average rate of speed of ordinary passenger trains,.....	23 miles per hour.
Average rate of speed of express trains,.....	32 miles per hour.
Average rate of speed of freight trains,.....	12 " " "
Rate of fare charged first class through passengers, per mile,.....	about 2 1-2 cents.
Rate of fare charged first class way passengers, per mile,	3 cents.
Average rate of fare charged 2d class passengers, per mile,	none.
Rate per ton per mile ch'd on 1st class through freight,	4 5-10 cts.
Rate per ton per mile ch'd on 2d class through freight,	3 7-10 "
Rate per ton per mile charged on 3d class through freight,	3 "
Rate per ton per mile ch'd on 4th class through freight,	2 5-10 "
Rate per ton per mile charged on 1st class way freight,	} 5 8-10 "
Rate per ton per mile charged on 2d class way freight,	
Rate per ton per mile charged on 3d class way freight,....	5 "
Rate per ton per mile charged on 4th class way freight,	3 5-10 "
Whole number of tons of through freight is.....	83.293
Whole number of tons of way freight is.....	18.267

TABLE G.

EXPENSES OF MAINTAINING ROADWAY AND REAL ESTATE,

For the year ending August 31st, 1860.

Ordinary repairs of road bed and railway.....	}	\$42.473 65
Extraordinary repairs of road bed and railway, including widening cuts and embankments, re- building and repairing masonry, ballasting, etc.,		
Cost of iron rails used in repairs.....	}	15.940 59
Number and weight of chairs.....		
Weight of spikes.....		
Cost of relaying rails.....		
Cost of repairs of iron rails.....	}	
Number and kind of cross ties used for.... renewals.....		24.570
Cost of same.		5.699 38
Insurance and taxes on real estate... ..		3.430 47
Repairs of bridges.		8.522 24
“ stations,.....		12.755 07
“ fences.....		2.444 15
“ masonry.....		4.015 99
Total,.....		<u>\$95.281 54</u>

COST OF REPAIRS OF MACHINERY.

Repairs of engines and tenders... ..	13 466 60
Repairs of passenger and baggage cars.....	8.537 29
Repairs of freight cars.....	35.323 37
Waste.....	1.368 45
Total.....	<u>\$58.695 71</u>

TABLE H.

COST OF OPERATING THE ROAD

For the year ending August 31st, 1860.

Fuel, including cost of preparing the same....	\$40.106	08	
No. of cords of wood used by locomotives...	}	13.970	
No. of cords of wood used at stations....			
No. of cords lost by fire.....			
Number of pounds of waste.....	13.303		
Cost of oil and waste for engines and tenders....	}	7.811	47
“ “ “ pas'nger and bag'age cars			
“ “ “ freight cars.....			
Loss and damage of goods.....		601	23
Loss and damage of baggage.....		392	13
Damages for injuries to persons.....	}	1.171	96
Damages to property, including fire, and animals killed on road.....			
Porters and watchmen.....	}	2.848	65
Switchmen..			
For salaries of Trustees, President, Directors, Secretaries, Treasurer and Superintendent....	}	13.233	36
For printing, stationery and office expenses....			
For law expenses.....			
Other expenses in detail as follows :			
Removing ice and snow.....		1.007	75
Total.....		\$67.172	63

RECAPITULATION OF EXPENSES.

Maintaining roadway.....	\$95.281	54
Repairs of machinery.....	58.695	71
Operating.....	67.172	63
Other payments per next page.....	113.217	85
Total.....	\$334.367	73

TABLE I.

EARNINGS, RECEIPTS AND PAYMENTS.

Earnings.

From passengers	\$129,211 51
From freight.....	177,725 29
From other sources.....	27,430 93
	<hr/>
	\$334,367 73

Receipts.

From passengers.....	\$129,211 51
From freight.....	177,725 29
From other sources.....	27,430 93
	<hr/>
	\$334,367 73

Payments other than for construction.

For transportation expenses, viz :

For passenger business.....	\$22,528 68
For freight business...	29,983 18
For interest.....	3,826 43
For carried to surplus fund	54,477 59
For amount of surplus fund.....	1,271 50
Mail Service... ..	} 1,130 47
Land and Land Damages.....	
	<hr/>
	\$113,217 85

Since the last report to the Commissioner there has been paid on Coupon No. 7, First Mortgage Bonds, \$3,720 50, making in all paid on Coupon No. 7, \$61,257 00; and there has been paid on Coupon No. 8, \$60,228 00.

VALUE OF MATERIALS ON HAND.

Wood, 10,916 cords, valued at.....	\$24,012 40
Iron rails, 405 tons.....	10,000 00
Iron and other metals, unwrought.....	5,744 80
Iron and other metals, worked and partly worked...	4,773 38
Lumber	2,261 97

DETAILS OF EARNINGS, FOR THE YEAR ENDING AUGUST 31ST, 1860.

SOURCE.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.	JANUARY.	FEBRUARY.
Through passengers,.....	\$8,439 38	\$6,636 89	\$5,200 51	\$4,208 13	\$ 3,038 02	\$3,574 65
Way ".....	8,273 94	6,197 65	4,589 65	3,904 94	3,677 88	3,869 15
Through freight,.....	14,891 34	15,962 52	13,876 85	11,023 03	8,940 11	9,598 71
Way ".....	2,526 48	3,369 50	2,806 72	2,590 33	2,245 19	1,885 83
Express,.....	583 33	583 33	583 33	583 33	583 33	583 33
Transport of mails,.....	1,291 66	1,291 67	1,291 67	1,291 66	1,291 67	1,291 67
Use of engines,.....						
Use of cars... ..	1,048 30	316 55	311 55	347 55	356 04	314 21
Rent,.....						
Other earnings specified in detail as follows :.....						
Total,	\$37,054 43	\$34,358 11	\$28,660 28	\$23,948 97	\$20,132 24	\$21,117 55

DETAILS OF EARNINGS, CONTINUED.

SOURCE.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.
Through passengers,.....	\$4,643 39	\$5,764 17	\$4,573 73	\$4,711 89	\$7,246 27	\$9,138 32
Way passengers,.....	5,491 55	4,650 67	4,069 46	4,804 32	5,832 71	6,674 24
Through freight,.....	11,819 85	10,952 98	12,196 94	12,168 04	11,291 18	12,123 50
Way freight,.....	2,831 61	3,269 62	3,439 65	2,468 32	2,655 55	2,791 44
Express,	583 33	583 33	583 33	583 33	583 33	583 33
Transport of mails,.....	1,291 66	1,291 67	1,291 67	1,291 66	1,291 67	1,291 67
Use of engines,.....						
Use of cars,.....	312 71	337 71	337 71	337 71	429 38	481 55
Rent,						
Other earnings specified in detail as follows :.....						
Total,....	\$26,974 10	\$26,850 15	\$26,492 49	\$26,365 27	\$29,330 09	\$33,084 05

TABLE J.

ACCIDENTS.

Thomas Waters, brakeman, struck by bridge while on top of car and killed, January 19, 1860.

TABLE K.

EMPLOYEES AND COMPENSATION.

1 General Ticket Agent, including assistants,	\$100 00	per mth.
1 Ticket Seller at Rutland,	50 00	"
1 Superintendent's Clerk,	58 33	"
3 Passenger Conductors,	54 00	"
1 " "	50 00	"
2 Through Baggage men,	40 00	"
5 Passenger Train Brakemen,	30 00	"
3 Station Baggage Masters, averaging,	25 80	"
3 Station Night Watchmen, "	28 67	"
2 Water Boys on Passenger Trains,	7 50	"
1 General Freight Agent,	58 33	"
1 Clerk in General Freight Office,	50 00	"
1 Freight Conductor,	50 00	"
1 " "	45 00	"
2 " "	40 00	"
1 Freight Train Brakeman,	35 00	"
6 " " "	30 00	"
1 Agent in Boston,	40 00	"
1 Car Repairer in Boston,	20 00	"
24 Station Agents, averaging,	24 94 $\frac{1}{2}$	"
2 " " "	95	per day.
Labor performed at Brandon by contract, ...	70 00	per mth.
" " Ludlow " " ...	46 00	"
" " Bellows Falls " " ...	150 00	"
5 Station Switchmen, averaging,	24 40	"
1 Car Switchman,	30 00	"
1 Teamster,	12 00	"
3 Station Clerks, averaging,	32 67	"
5 Station Laborers, averaging,	90	per day.
1 Station Laborer,	22 00	per mth.
1 Passenger Agent,	16 66	"

3 men who perform side Mail Service, averaging,	18 60	per mth.
2 Tallymen, averaging,	24 00	"
1 Telegraph Operator,	8 33	"
1 Master Mechanic,	100 00	"
1 " " Clerk,	40 00	"
1 Foreman Shop at Rutland,	60 00	"
1 " " Bellows Falls,	60 00	"
12 Machinists, averaging,	1 56 $\frac{1}{3}$	per day,
1 Boiler Maker,	1 67	"
1 " " helper,	1 00	"
9 Shop Laborers, averaging,	97	"
2 Bolt Cutters,	90	"
2 Shop Watchmen,	90	"
1 Car Oiler,	1 10	"
1 Car Cleaner,	18 00	per mth.
21 Car Repairers, averaging,	1 34	per day.
1 " "	38 00	per mth.
2 Stationary Engineers, averaging,	1 12 $\frac{1}{2}$	per day.
5 Painters, averaging,	1 47	"
6 Blacksmiths, "	1 74	"
3 Rail Repairers (receive 25 cts. per rail), ..		
6 " " helpers,	90	"
2 Blacksmith's helpers,	1 00	"
10 " "	90	"
11 Locomotive Engineers,	60 00	per mth.
1 " "	50 00	"
3 " "	40 00	"
14 " Firemen,	30 00	"
6 " Watchmen, averaging,	25 17	"
2 " "	90	per day.
1 Bridge Builder and Wood Agent,	66 67	per mth.
1 Switchman Wood Train,	1 00	per day.
13 Laborers " "	90	"
1 Foreman Bridge Department,	1 75	"
5 Bridge Carpenters, averaging,	1 32	"
1 Road Master,	66 66	per mth.
1 Assistant Road Master,	50 00	"
21 Section Masters, averaging,	34 43	"
15 2d hands,	90	per day.
76 Track Laborers,	90	"

1 Yard Track Master,	35 00	per mth.
1 Foreman Iron Train,	1 50	per day.
1 Switchman, "	1 00	"
12 Laborers "	90	"
1 Water Boy "	45	"
1 Foreman Gravel Train,	10 00	per mth.
1 Switchman "	90	per day.
13 Laborers "	90	"
1 Foreman Stone Work,	3 00	"
7 Masons, Stone Cutters and Helpers, averaging,	1 41	"

OFFICERS OF THE COMPANY.

*Directors.*THOMAS THACHER, *President.*

HARRISON FAY,

JAS. H. WILLIAMS,

JOHN A. CONANT,

D. A. SMALLEY,

I. B. BOWDISH,

E. A. CHAPIN,

B. B. SMALLEY, *Corporation Clerk,*G. B. GIBBONS, *Treasurer.*

STATE OF VERMONT, }
 Rutland County, ss. }

We, Thomas Thacher and E. A. Chapin, depose and say that the facts set forth, and statements made in the foregoing report, which has been signed by us, are true and correct according to the best of our knowledge, information and belief.

Signed,

THOMAS THACHER,
 E. A. CHAPIN.

Subscribed and sworn to before me, this 4th day of October,
 1860. GEO. B. GIBBONS, *Notary Public.*

ANNUAL REPORT

OF THE TRUSTEES OF THE RUTLAND AND WASHINGTON RAILROAD
COMPANY FOR THE YEAR ENDING AUGUST 31st, 1880.

TABLE A.

STOCK AND DEBTS.

Capital stock as by charter,\$950.000 00

TABLE C.

EQUIPMENT.

Total cost of road and equipment, :.....\$1,771.683 31

TABLE E.

CHARACTERISTICS OF ROAD.

Length of road,	} 62 miles.
“ “ completed,	
“ side tracks,	4 “
Weight of rail per yard,.....	58 to 61 lbs.
Width of earth cuts at grade,.....	22 feet.
Slope of earth cuts,.....	1 to 1½
Width of embankments at grade,.....	15 feet

CHARACTER AND LENGTH OF BRIDGING.

	No. of structures	No. of spans.	Len'th of bridging in feet.
Pile bridging, with one draw,.....			
Truss do., 50 feet span and under,.....	7	7	320
Truss do., from 50 to 100 feet span,	9	9	559
Truss do., from 100 to 150 feet span, ...	3	3	358
Truss do., 150 feet span and over,.....	8	12	1661
Totals,	27	31	2898

Number of road crossings at grade,.....	58
Number of road crossings above and below grade,.....	3
Number of cross ties per mile,	2051
Average length and size of cross ties, 7 to 7½ ft. long, 6 by 8 in.	
Kinds of timber used for cross ties, chestnut, oak, tamarack, ash and hemlock.	
Chairs, number per mile,	586
Wrought or cast iron,	cast.
Average weight of cast iron chairs,	17 lbs.
Whole number of single switches on main track,	37
Kind of switches used,.....	lever.

BUILDINGS AND FIXTURES.

Passenger houses,	12
Freight houses,.....	12
Engine houses,.....	4
Repair shops,	2
Water stations,.....	7
Dwellings,.....	2
Wood sheds,.....	7
Turn tables,	8

EQUIPMENT.

Number of locomotives owned by the company on the 31st day of August, 1860.

	Under 16 tons.	16 to 20.	20 to 25.	25 to 30.	30 tons and over.
In good repair,.....		4		4	
Requiring slight repair,.....				1	
Requiring heavy repairs,.....		1			
Worn out,.....					

Number of cars owned by the company, August 31, 1860.

First Class 8 wheel Passenger cars in good repair,.....	5
First class 8 wheel passenger cars wanting repair,.....	1
Baggage, express and mail cars in good repair,.....	3
Covered freight and cattle 8 wheel cars, in good repair,..	94
Covered freight and cattle 8 wheel cars, wanting repair,....	20
Platform 8 wheel cars, in good repair,.....	57

• TABLE F.

BUSINESS OF THE YEAR.

Miles run by passenger trains,.....	70.276
Miles run by freight trains,.....	72.563
Miles run by gravel and construction trains,.....	7.709
Miles run by wood trains,....	5.249
Number of through passengers carried in cars,	} 83.488
Number of way passengers,	
Number of miles traveled by passengers,	1.581.078
Number of miles traveled by passengers (other than employees) having passes,.....	} no record.
Number of tons of freight carried in cars one mile,..	
Average rate of speed of ordinary passenger trains,.....	25 miles per hour.
Average rate of speed of express trains,.....	33 miles per hour.
Average rate of speed of freight trains,.....	12 " " "
Rate of fare charged 1st class thro' passengers, per mile,	} 3½ cts.
Rate of fare charged 1st class way passengers, per mile,	
Average rate of fare ch'd 2d class passengers	

Rate per ton per mile charged on 1st class through freight,	3 cts.
Rate per ton per mile charged on 2d class through freight,	2½ cts.
Rate per ton per mile charged on 3d class through freight,	2 "
Rate per ton per mile charged on 4th class through freight,	none.
Rate per ton per mile charged on 1st class way freight,	.. 7½ cts.
Rate per ton per mile charged on 2d class way freight,	... 3¾ "
Rate per ton per mile charged on 3d class way freight,	... none.
Rate per ton per mile charged on 4th class way freight,	... none.

TABLE G.

EXPENSES OF MAINTAINING ROADWAY AND REAL ESTATE,

For the year ending August 31st, 1860.

Ordinary repairs of road bed and railway,	\$20.356	15
Extraordinary repairs of road bed and railway, } including widening cuts and embankments, re- building and repairing masonry, ballasting, etc., }	7.299	11
Cost of iron rails used in repairs,		
Cost of repairs of iron rails,	2.584	82
Number and kind of cross ties used for renewals, 16000 — chestnut and tamarack.		
Insurance and taxes on real estate,	1.368	51
Repairs of bridges,	8.178	75
" fences,	689	18
" buildings and stations,	1.780	29

Bridge at Granville 133 feet long, cost \$17 per lineal foot.
Built to supply place of old bridge removed.

COST OF REPAIRS OF MACHINERY.

Repairs of engines and tenders,	\$7.364	22
" passenger and baggage cars,	2.839	36
" freight cars,	8.925	81
" tools and machinery in shops,	350	00
Oil used about workshops,	}	133 50
Waste,		
Total,	\$19.591	89

TABLE H.

COST OF OPERATING THE ROAD.

For the year ending August 31st, 1860.

Fuel, including cost of preparing the same,.....	\$20.578 10
Number of cords lost by fire,	none.
Cost of oil and waste for engines and tenders,	1.536 30
“ “ “ passenger and baggage cars,	165 30
“ “ “ freight cars,	1.529 00
Loss and damage of goods,.....	} 1.527 89
Loss and damage of baggage,	
Damages for injuries to persons,	
Damages to property, including fire, and animals killed on road,	
Office expenses and stationery,	} 10.064 98
Number of agents,.....	
Number of clerks,	
Labor, loading and unloading freight,	
Porters and watchmen,	} 12.986 79
Switchmen,	
Wood and water station attendance,	
Conductors and baggage men,.....	
Brakemen,	
Enginemen and Firemen,	
For salaries of Trustees, President, Directors, Sec- retaries, Treasurer and Superintendent,.....	7.000 00
For printing, stationery and office expenses,	1.981 59
For law expenses,.....	1.190 06

RECAPITULATION OF EXPENSES.

Maintaining roadway,	\$42.256 81
Repairs of machinery,	19.612 89
Operating,	58.560 01
Total,.....	\$120.429 71

No salaried solicitor employed.

TABLE I.

EARNINGS, RECEIPTS AND PAYMENTS.

Earnings.

From passengers,	\$52.619 78
From freight,.....	88.848 04
From other sources,	9.250 00

VALUE OF MATERIALS ON HAND.

Wood, cords of, 1300,	\$5.200 00
Oil, gallons of, 100,.....	100 00
Iron rails, tons of, old, }	62,
Iron rails, tons of, new, }	
Chairs, pounds of, 104,.....	1.860 00
Spikes, pounds of, 3200,	
Ties, number of, 2876,.....	862 80
Iron and other metals, unwrought,.....	} 5.468 00
Iron and other metals, worked and partly worked,..	
Lumber,... ..	1.100 00
Total,.....	<u>\$14.590 80</u>

DETAILS OF EARNINGS, FOR THE YEAR ENDING AUGUST 31ST, 1860.

SOURCE.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.	JANUARY.	FEBRUARY.
Through passengers, . . . }	\$5.976 66	\$5.578 01	\$3.797 74	\$3.043 97	\$3.320 49	\$3.321 60
Way " " " " }						
Through freight, }	10.826 71	12.285 95	10.141 77	5.816 37	4.322 77	4.490 49
Way " " " " }						
Express, }	250 00	250 00	250 00	250 00	250 00	250 00
Transport of mails, }	520 83	520 83	520 84	520 83	520 83	520 84
Use of engines, }						
Use of cars, }						
Rent, }						
Other earnings specified in detail as follows : }						
Total,	\$17.575 20	\$18.634 79	\$14.710 35	\$9.631 17	\$8.414 09	\$8.582 93

DETAILS OF EARNINGS, CONTINUED.

SOURCE.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.
Through passengers,..... }	\$4,355 52	\$4,049 15	\$3,651 66	\$3,985 35	\$5,201 87	\$6,337 76
Way passengers,..... }						
Through freight,..... }	5,852 37	6,640 89	7,863 40	6,719 83	6,082 97	7,804 52
Way freight,..... }						
Express,	250 00	250 00	250 00	250 00	250 00	250 00
Transport of mails,.....	520 83	520 83	520 84	520 83	520 83	520 84
Use of engines,.....						
Use of cars,.....						
Rent,						
Other earnings specified in detail as follows :.....						
Total,	\$10,978 72	\$11,460 87	\$12,285 90	\$11,476 01	\$12,055 67	\$14,913 12

TABLE J.

ACCIDENTS.

Two persons killed; neither passengers or employees.
 No accident from carelessness of employees.

NOTE. The two persons killed were at West Rutland. One by attempting to get on the train when in motion, and the other by being on the side track when the train was backing. The usual alarm was given and every effort made by the employees to avoid the accident.

TABLE K.

EMPLOYEES AND COMPENSATION.

Master of Transportation and Clerks in General Office,	\$60 00	per mth.
14 Station Agents, average,	37 86	"
5 Passenger and Freight Conductors, average, ..	45 00	"
2 " Baggage-men and Brakemen, do.	35 00	"
6 Freight Brakemen,	30 00	"
Master Mechanic,	83 33	"
" " Clerk,	30 00	"
3 Machinists,	1 66	per day.
1 Boiler and Tank Repairer,	2 00	"
2 Blacksmiths,	1 77	"
2 Rail Repairers,	1 43	"
1 Pattern Maker,	1 75	"
5 Car Repairers,	1 51	"
1 Car Oiler,	1 00	"
2 Painters,	1 68	"
6 Blacksmith Helpers,	93	"
6 Watchmen,	95	"
Engineer Stationary Engine,	30 00	per mth.
Foreman Rutland Shop,	56 00	"
6 Engineers,	60 00	"
1 Engineer,	35 00	"
7 Firemen,	30 00	"
Road Master,	83 33	"
12 Foremen of Sections,	35 00	"
50 Track Laborers,	90	per day.

OFFICERS OF THE COMPANY.

THO'S H. CANFIELD, *President.**Directors.*

MERRITT CLARK,
GEO. F. EDMUNDS,
W. T. HART,
D. A. SMALLEY,
CHESTER SPENCER,
O. D. ASHLEY,

Trustees.

B. E. BATES,
F. E. WOODBRIDGE,
JAMES A. COWING,

STATE OF VERMONT, }
RUTLAND COUNTY, SS. }

I, F. E. Woodbridge, depose and say that the facts set forth, and statements made in the foregoing report, which has been signed by me, are true and correct according to the best of my knowledge, information and belief.

Signed,

F. E. WOODBRIDGE,
Managing Trustee.

Subscribed and sworn to before me, this 7th day of October,
1860.

HORACE ALLEN,
Justice of the Peace.

ANNUAL REPORT

OF THE TRUSTEES OF THE VERMONT VALLEY RAILROAD COMPANY
FOR THE YEAR ENDING AUGUST 31ST, 1860.

TABLE A.

STOCK AND DEBTS.

1. The amount of capital stock as by charter,.....	\$500.000
	[with right to increase.
2. " " " subscribed,.....	535.000
3. " " " paid in as by last report,.....	516.163 82
4. The amount of capital stock now paid in,.....	516.163 82
Number of shares 5358, original stock par value, \$100 per share.	
Cash realized,	516.163 82

FUNDED DEBT.

Funded debt as by last report,.....	\$793 200
Amount of funded debt now,.....	793.200
Total of funded and floating debt,.....	793.200
Average rate of interest on funded debt, \$679.200 at 7 per cent.	
" " " " " "	114.000 " 6 "

CLASSES OF FUNDED DEBT.

	No. 1.	No. 2.
Amount,.....	\$500.000	\$293.200
Date of issue,.....	April 1, 1850	October 1, 1854
Date of payment,.....	April 1, 1860	October 1, 1859
Annual rate of interest,	\$386.000 7 per ct. 114.000 6 per ct.	7 per cent.
Interest, when payable,..	April 1 & Oct. 1.	Oct. 1 & April 1.
Cash realized,.....	\$500.000	\$175.920
Nature and character } of security,..... }	Mortgage.	Mortgage.

Both Classes of bonds are payable in New York and are not convertible.

The balance of interest due on coupons payable October 1, 1856, is now being paid.

TABLE B.

COST OF CONSTRUCTION.

Total.....	\$800.000
For land, land damages and fences,.....	69.741 89
For engineering,.....	753 39
	<hr/>
	\$870.495 28

There has been expended, which has passed into construction account in addition to the original contract of \$800.000, for discount on \$293.200 second class bonds, payment of coupons over and above earnings, graveling the road, &c.,....

Incidental expenses,..	320.194 65
Interest dividend on stock,.....	14.096 76
New side track at Putney,.....	7.056 61
	431 10
	<hr/>
	\$1.212.274 40

TABLE C.

EQUIPMENT.

For locomotive engines and fixtures, (including snow plows,).....	\$37.520 00
For Passenger and baggage cars,.....	11.300 00
For freight cars,.....	36 371 79
Hand cars and repair cars,.....	420 00
Tools, &c., machinery used in repairs,.....	4.000 00
	<hr/>
Total cost of equipment,.....	\$89.611 79
Total cost of road and equipment,.....	\$1.301.886 19

TABLE E.

CHARACTERISTICS OF ROAD.

Length of road,.....	23 ⁸⁹ / ₁₀₀ miles.
“ “ completed,....	23 ⁸⁹ / ₁₀₀ “
Weight of rail per yard,...	57 pounds.
Width of earth cuts at grade,.....	20 feet.
“ rock “ “	16 “
Slope of earth cuts,.....	1 foot to 1 foot.
Width of embankments at grade,.....	16 feet.

CHARACTER AND LENGTH OF BRIDGING.

	No. of structures	No. of Spans.	Length of bridging in feet.
Trestle bridging,.....	2	10	100
Truss bridging, 50 feet span and under,	2	1	45
Truss do. 50 to 100 ft. span,.....			
Truss do. from 100 to 150 feet span,....	1	1	116
Truss do. 150 feet span and over,....	2	6	{ 192
Draw bridges,.....			{ 321
Totals,.....	7	18	774

Number of road crossings at grade,.....	11
“ “ “ above and below grade,.....	3
Number of cross ties per mile,.....	2000
Average length and size of cross ties,.....	7 feet, 6 by 6 inches
Kinds of timber used for cross ties,.....	Chestnut.
Chairs, number per mile,.....	586
Wrought or cast iron,.....	cast.
Average weight of cast iron chairs,.....	20 lbs.
Average weight of wrought iron chairs,.....	12 lbs.

GRADIENTS AND ALIGNMENT.

Level, number of miles,..	7 61-100ths.
From 10 to 20 feet, number of miles.....	7 63-100ths.
“ 20 to 30 “ “	5 60-100ths.
Maximum grade,.....	32 feet.
Amount of straight line, miles,.....	10 72-100
“ curved “ “	12 97-100
Maximum radius,.....	872
Minimum radius,.....	600

BUILDINGS AND FIXTURES.

Passenger houses,.....	4
Freight houses,.....	4
Engine houses,.....	1
Repair shops,.....	1
Water stations,.....	2
Wood sheds,.....	3
Other buildings as follows:	
One new building for storing passenger cars, built in 1857 and additions in 1858-9, cost say,.....	\$616 25

EQUIPMENT.

Number of locomotives owned by the Company on the 31st day of August, 1860.

	Under 16 tons.	16 to 20.	20 to 25	25 to 30	30 tons and over.
In good repair,		2	1		
Requiring heavy repairs,					

Number of cars owned by the company, August 31, 1860.

First class 8 wheel passenger cars in good repair,	4
Baggage, express and mail cars in good repair,	2
Covered freight and cattle 8 wheel cars, in good repair,	31
Platform 8 wheel cars in good repair,	10

TABLE F.

BUSINESS OF THE YEAR.

Miles run by passenger trains,	31.850
“ “ freight trains,	16.100
“ “ wood trains,	1.335
Number of through passengers carried in cars,	22.851
Number of way passengers,	9.455
Number of miles traveled by way passengers,	100.915
Number of tons of freight carried in cars one mile,	630.779
Average rate of speed of ordinary passenger trains,	26 miles per hour.
Average rate of speed of freight trains,	12 miles per hour.
Rate of fare charged first class through passengers per mile,	3 2-10ths cents.
Rate of fare charged first class way passengers per mile,	3 4-10ths cents.
Average rate of fare charged second class passengers per mile,	2 7-10ths cents.
Rate per ton per mile charged on 1st class thro' freight, 4 cents.	
“ “ “ “ 2d “ “ “ 3 cents.	
“ “ “ “ 3d “ “ “ 2½ cents.	
“ “ “ “ 4th “ “ special, 6 cents.	
“ “ “ “ 1st “ way freight, 8 cents.	
“ “ “ “ 2d “ “ special, 11 cents.	

TABLE G.

EXPENSES OF MAINTAINING ROADWAY AND REAL ESTATE,

For the year ending August 31st, 1860.

Ordinary repairs of road bed and railway,.....	\$7.453 14
Cost of iron rails used in repairs, 90 tons a \$50.00..	4.500 00
Number and weight of chairs, 20 lbs. each,.....	325 146 23
Weight of spikes,.....	2800 125 35
Cost of repairs of iron rails.....	1701 1.447 08
Number and kind of cross ties used for renewals, chestnut, 8.805.	2.116 93
Insurance and taxes on real estate... ..	540 55
Repairs of bridges.	77 90
	<hr/>
	\$16.407 18
Less received for old iron rails,.....	1.700 00
	<hr/>
Total,.....	\$14.707 18

COST OF REPAIRS OF MACHINERY.

Repairs of engines and tenders... ..	2.364 15
Repairs of passenger and baggage cars.....	1.628 76
Repairs of freight cars.....	1.214 04
Repairs of tools and machinery in shops,.....	50 00
	<hr/>
Total.....	\$5,256 95

TABLE H.

COST OF OPERATING THE ROAD

For the year ending August 31st, 1860.

Fuel, including cost of preparing the same, 1334...	\$3.925 80
No. of cords of wood used by locomotives...1284...	
No. of cords of wood used at stations,.... 50...	
No. of gallons of oil,..... 944...	948 85
Number of pounds of waste.....1955...	168 56
Loss and damage of goods,	3 84
Office expenses and stationery,.....	200 00
Number of agents,.....five	1.164 00
“ clerks,.....two	1.280 00
Porters and watchmen,.....	648 00
Switchmen..	324 00
Wood and water station attendance, and road crossing,	120 00
Conductors and baggage men,..	966 48
Brakemen,	648 00
Enginemen and firemen,.....	2.040 80
For salaries of Trustees, President, Directors, Sec- retaries, Treasurer and Superintendent.....	3.100 00
For law expenses.....	6 00
Other expenses in detail as follows :	
Railroad commissioner,.....	24 51
Allowance to Vermont & Massachusetts railroad for use of depot and track and services of station } agent at Brattleboro,.....	1.666 67
Proportion of through baggage master,.....	208 24
Total.....	\$17.443 75

RECAPITULATION OF EXPENSES.

Maintaining roadway.....	\$14.707 18
Repairs of machinery.....	5.256 95
Operating.....	17.443 75
Total.....	\$37.407 88

TABLE I.

EARNINGS, RECEIPTS AND PAYMENTS.

Earnings.

From passengers	\$21.018 89
From freight.....	20.071 86
From other sources.....	4.839 94
	<hr/>
	\$45.930 69

Receipts.

From passengers.....	\$21.018 89
From freight.....	20.071 86
From other sources.....	4.839 94
	<hr/>
	\$45.930 69

VALUE OF MATERIALS ON HAND.

Wood, 1,319 cords, valued at.....	\$3.070 58
Oil, 132 gallons,.....	110 55
Waste, 772 pounds,.....	87 20
Iron rails, 90 tons, old,.....	2.700 00
Iron rails, 87½ tons of new,.....	
Chairs, 1100 pounds,.....	49 50
Spikes, 2550 pounds,.....	127 50
Ties, 630	157 50
Iron and other metals, unwrought, 5664 pounds,.....	382 49
Iron and other metals, materials and machinery worked and partly worked.....	7.067 12
Lumber and ready made wood work, 18,341 feet,..	501 25
	<hr/>
Total,.....	\$14.253 69

DETAILS OF EARNINGS, FOR THE YEAR ENDING AUGUST 31ST, 1860.

SOURCE.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.	JANUARY.	FEBRUARY.
Through passengers,.....	\$1,891 73	\$1,437 34	\$1,300 33	\$817 83	732 83	\$750 33
Way passengers,.....	494 18	388 52	403 28	296 50	288 32	308 33
Through freight,.....	1,318 80	1,618 36	1,388 50	1,312 93	1,061 05	1,149 13
Way freight,.....	479 09	349 78	319 14	236 13	254 49	131 82
Express,	70 59	70 59	70 59	70 59	70 59	70 59
Transport of mails,.....	250 00	250 00	250 00	250 00	250 00	250 00
Use of engines,.....				13 00		46 00
Use of cars,.....	90 99	52 48	28 59	18 46	34 93	35 55
Rent,						
Other earnings specified in detail as follows :.....						
Total,....						

DETAILS OF EARNINGS, CONTINUED.

SOURCE.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.
Through passengers.....	\$995 57	\$1,169 21	\$968 14	\$1,340 63	\$2,049 00	\$2,453 80
Way passengers.....	485 07	399 53	360 47	383 74	646 97	653 39
Through freight.....	1,555 9	1,636 82	1,771 50	1,383 30	1,319 63	1,401 78
Way freight.....	254 95	271 73	307 97	191 11	149 02	208 94
Express.....	70 59	70 59	70 59	70 59	70 59	70 59
Transport of mails.....	250 00	250 00	250 00	250 00	250 00	250 00
Use of engines.....				36 00	10 00	
Use of cars.....	73 59	56 54	145 06	131 65	121 48	98 54
Rent.....						
Other earnings specified in detail as follows:.....						
Total.....						

TABLE K.

EMPLOYEES AND COMPENSATION.

A. Hamilton, Jr., General Agent,.....	\$1200 00	per year.
Madison Sloat, Superintendent,.....	1500 00	"
Henry F. Green, Chief Clerk,.....	800 00	"
William P. Cochran, Assistant Clerk,.....	480 00	"
Samuel C. Fleming, Passenger Conductor, in connection with Connecticut River railroad,.....	243 24	"
H. D. Carroll, do. do.	243 24	"
George H. Allen, Freight Conductor,.....	480 00	"
W. W. Cochran, Station Agent at Bel'ws F'ls,	270 00	"
John Perry, do. do. Westm'ster,	270 00	"
D. Stearns, do. do. E. Putney,	150 00	"
M. Pierce, do. do. Putney,....	182 00	"
William Bemis, do. do. Dum'erston,	192 00	"
G. W. Miner, Brakeman and Baggage Master,	32 50	per mth.
Moses Osgood, do.	27 00	"
Curtis Allen, do.	27 00	"
Peter Brown, Master Mechanic,.....	67 50	"
William Clegg, Engineman,.....	55 00	"
Ira Earl, do.	55 00	"
2 Firemen, each,.....	27 00	"
2 Watchmen, each,.....	27 00	"
1 do.	10 00	"
1 Switchman,.....	27 00	"
1 Machinist,.....	1 65	per day.
1 do.	32 50	per mth.
1 Blacksmith,.....	1 75	per day.
1 " Helper,.....	1 00	"
2 Carpenters, each,.....	1 35	"
4 Track Masters,.....	86 00	per mth.
4 2d hand Road Men,.....	1 00	per day.
15 Track Hands,.....	90	"

SALARIES.

General Agent,.....	\$1.200
Superintendent,	1.500
Treasurer,.....	400
Agents,	1.164

STATE OF VERMONT, }
WINDHAM COUNTY, ss. }

Sept. 26, 1860.

I, Henry F. Green, chief clerk of the Vermont Valley railroad, depose and say that the facts set forth, and statements made in the foregoing report, which has been signed by me, are true and correct according to the best of my knowledge, information and belief.

Signed

HENRY F. GREEN,
Chief Clerk Vermont Valley Railroad.

Subscribed and sworn to before me, this 26th day of September, 1860.

RUSSELL HYDE,
Justice of the Peace.

ANNUAL REPORT

OF THE VERMONT CENTRAL RAILROAD COMPANY, FOR THE YEAR
ENDING AUGUST 31st, 1890.

TABLE A.

STOCK AND DEBTS.

The amount of capital stock is unlimited by the charter.

100,000 shares of stock have been issued at rates which average \$50 per share.

There are no bonds in existence which will enable us to give the amounts paid for interest and discount.

TABLE B.

COST OF CONSTRUCTION.

The construction account not having been kept in accordance with this table, the details cannot be accurately given.

The total cost of the Vermont Cen. R. R. was \$8,402,054 92.

TABLE C.

EQUIPMENT.

Details of the account were not kept so as to answer the above questions.

TABLE E.

CHARACTERISTICS OF ROAD.

Length of road, Vt. Central and Vt. and Canada....	166 miles.
“ “ completed,.....	166 miles.
“ side tracks,	about 21½ “
Weight of rail per yard,.....	54 to 64 lbs.
Width of earth cuts at grade,.....	26 feet.
“ rock “ “	26 feet.
Slope of earth cuts,.....	1 foot to 1½ feet.
“ rock “	1 foot to 4 feet.
Width of embankments at grade,.....	say 14 feet.

CHARACTER AND LENGTH OF BRIDGING.

	No. of Struct'r's	No of Spans.	Length of bridging in feet
Trestle bridging, piles and cribs.....	3		7390
Truss bridging, 50 feet span and under, .45	55		1595
Truss do. from 50 to 100 feet span,...	6	6	357
Truss do. from 100 to 150 feet span,..	18	29	3550
Truss do. 150 feet span and over,.....	14	28	4425
Draw bridges and draw boat.....	2		339
Totals,...	88	118	17,656

Number of road crossings at grade,...	87
Number of road crossings above and below grade,.....	31
Number of cross ties per mile,	2059
Average length and size of cross ties, 7 1-2 ft. long 6 by 9 inches.	
Kinds of timber used for cross ties, hemlock, tamarack and bur-	
netized wood.	
Chairs, number per mile,.....	about 550
Wrought or cast iron,.....	most of them cast.
Wood,.....	none.
Average weight of cast iron chairs,.....	21 lbs.
Average weight of wrought iron chairs,.....	6½ and 13½ lbs.
Whole number of single switches on main track,.....	93
Kind of switches used,.....	crank.

GRADIENTS AND ALIGNMENT.

Level, number of miles.....	} notes burnt.
From 10 to 20 feet, number of miles.....	
From 20 to 30 feet, number of miles.....	
From 30 to 40 feet, number of miles.....	
From 40 to 50 feet, number of miles.....	
From 50 to 60 feet, number of miles.....	
From 60 to 70 feet, number of miles.....	
Maximum grade.....	main line 45 feet.
Amount of straight line, miles.....	Vt. Central 85 miles.
Amount of curved line, miles.....	Vt. Central 34 miles.
Maximum radius.....	11,460 feet.
Minimum radius.....	1,146 feet.
Sum of ascents going in one direction.....	} notes burnt.
Sum of ascents going in opposite direction.....	
Height of termini and summit above tide water..	

BUILDINGS AND FIXTURES.

Passenger houses,..	30
Freight houses,..	17
Engine houses,..	6
Repair shops,..	2
Water stations,..	30
Dwellings.....	7
Wood sheds,..	46
Turn tables,..	4
Other buildings, as follows :	
Car houses,..	2
Ice houses,..	4

EQUIPMENT.

Number of locomotives owned by the Company on the 31st day of August, 1860.

	Under 16 tons.	16 to 20.	20 to 25.	25 to 30.	30 tons and over.
In good repair,			4	25	
Requiring slight repair,			1	3	
Requiring heavy repairs,			3	5	
Worn out,	1				

Number of cars owned by the company, August 31, 1860.

First class 8 wheel passenger cars in good repair,.....	20
First class 8 wheel passenger cars wanting repair,.....	6
Second class 8 wheel passenger cars in good repair,.....	0
Second class 8 wheel passenger cars, wanting repair,.....	0
Baggage, express and mail cars in good repair,.....	5
Baggage, express and mail cars wanting repair,.....	4
Covered freight and cattle 8 wheel cars in good repair,.....	589
Covered freight and cattle 8 wheel cars wanting repair,.....	50
Platform 8 wheel cars in good repair,.....	82
Other freight cars,.....	22
Gravel cars,....	31

TABLE F.

BUSINESS OF THE YEAR.

Miles run by passenger trains,.....	267.170
Miles run by freight trains,.....	439.647
Miles run by gravel and construction trains,.....	14.293
Miles run by wood trains,.....	8.903
Number of through passengers carried in cars,.....	88.003
Number of way passengers,.....	93.716
Number of miles traveled by way passengers,.....	2.716.267
Number of miles traveled by through passengers (other than employees) having <i>passes</i> ,....	4.587.983
Number of tons of Freight carried in cars 1 mile, 22.854.215	¹⁷⁴⁰ / ₂₀₀₃
Average rate of speed of ordinary pas'ger trains, 23 miles per hour	
Average rate of speed of express trains,.....	26 miles per hour.
Average rate of speed of freight trains,.....	10 miles per hour.
Rate of fare charged first class through passengers per mile,.....	about 2½ cents.
Rate of fare charged first class way passengers, per mile,.....	about 3½ cents.
Average rate of fare charged second class pas'gers, per mile,	none.
Rate per ton charged on 1st class through freight,.....	Rates vary from 1 1-4 to 5 cts. per ton, a mile according to the season.
Rate per ton per mile charged on 2d class through freight	
Rate per ton per mile charged on 3d class through freight	
Rate per ton per mile charged on 4th class through freight	
Rate per ton per mile charged on 1st class way freight	
Rate per ton per mile charged on 2d class way freight	
Rate per ton per mile charged on 3d class way freight	
Rate per ton per mile charged on 4th class way freight	

TABLE G.

EXPENSES OF MAINTAINING ROADWAY AND REAL ESTATE

For the year ending June 30th, 1860.

Ordinary repairs of road bed and railway,.....	\$58.140 05
Extraordinary repairs of road bed and railway, including widening cuts and embankments, rebuilding and repairing masonry, ballasting, etc.,.	59.473 30
Cost of iron rails used in repairs,.....	58.156 94
Cost of relaying rails,.....	11.222 23
Cost of repairs of iron rails,.....	15.302 87
Cost of cross ties used for renewals,.....	19.402 64
Cost of relaying,.....	7.089 57
Insurance and taxes on real estate,.....	2.500 00
Repairs of bridges, and union boat,.....	41.039 79
“ stations,.....	9.845 77
“ fences,.....	5.785 55
Total,.....	\$287.958 71

One bridge 650 feet long destroyed by fire, has been rebuilt.

One bridge 450 feet long, entirely new masonry and wood work has been built in place of one 720 feet long which was decayed.

COST OF REPAIRS OF MACHINERY.

Repairs of engines and tenders,.....	\$59.643 44
Repairs of passenger and baggage cars,.....	13.819 04
Repairs of freight cars,.....	50.399 55
Repairs of tools and machinery in shops,.....	3.380 02
Oil used about workshops,.....	2.059 85
Fuel used in shops, depots, and draw boat,.....	11.180 00
Waste,.....	351 20
Other items in detail as follows:	
Repairing gravel cars,.....	515 88
“ hand cars,.....	1.522 37
“ snow plows,.....	495 83
Total,..	\$143.367 18

TABLE H.

COST OF OPERATING THE ROAD

For the year ending June 30th, 1860.

Fuel, including cost of preparing the same,.....	\$61.477	00
Number of cords of wood used by locomotives, 23.395		
“ “ “ “ stations & shops, 4.518		
Number of cords lost by fire,.....	606	
Number of gallons of oil,..	15.940	
Number of pounds of waste,	31.236	
Cost of oil and waste for engines and tenders.....	6.877	78
“ “ “ passenger and baggage cars..	711	10
“ “ “ freight cars,.....	5.559	55
Loss and damage of goods,.....	1.757	61
“ “ baggage,.....	202	19
Damages for injuries to persons,	323	58
“ to property, including fire, and animals killed on road,.....	369	50
Office expenses and stationery,.....	3.153	15
Agents, station and agencies,.....	19.129	98
Clerks, ticket master and master transportation,....	4.079	88
Labor loading and unloading freight,.....	12.018	82
Porters and watchmen,.....	4.494	57
Switchmen,.....	2.218	79
Conductors and baggage men,.....	19.831	48
Brakemen,.....	6.248	64
Enginemen and firemen,.....	28.544	33
For salaries of Trustees, President, Directors, Sec- retaries, Treasurer and Superintendent,.....	17.932	47
For law expenses,.....	3.500	60
Miscellaneous expenses, passenger department,.....	2.185	88
“ “ freight “	2.680	81
Telegraph, advertising, express, mails, masters in } chancery, &c.,.....	13.218	73
Total,.....	\$216.516	44

VERMONT CENTRAL RAILROAD.

RECAPITULATION OF EXPENSES.

Maintaining roadway,.....	\$287.958	71
Repairs of machinery,.....	143.367	18
Operating,.....	216.516	44
Total,.....	\$647.842	33

TABLE I.

EARNINGS, RECEIPTS AND PAYMENTS

Earnings.

From passengers,.....	\$209.075	07
From freight,.....	533.095	70
From other sources,.....	33.398	14
Total,.....	\$775.568	91

Payments other than for Construction.

For transportation expenses, viz :

For passenger business,.....	\$37.112	20
For freight business,.....	104.442	43
For other business,.....	506.287	70
	\$647.842	33

VALUE OF MATERIALS ON HAND.

Wood, cords of,.....	33.133	\$74.269	90
Oil, gallons of,	530	606	80
Waste, pounds of,.....	2.800	238	00
Iron and other metals, unwrought,.....	}	27.204	42
Iron and other metals, worked and partly worked, }			
Lumber,.....		8.758	43
		\$111.075	55

DETAILS OF EARNINGS, FOR THE YEAR ENDING JUNE 30TH, 1860.

SOURCE.	JULY.	AUGUST.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.
Through passengers,.....	\$9,760 23	\$14,933 91	\$13,596 34	\$12,755 46	\$9,466 08	\$10,414 88
Way ".....	9,570 58	11,355 50	10,478 93	8,287 04	7,636 37	4,923 65
Through freight,.....	30,247 56	38,365 04	48,359 25	53,887 18	52,511 38	44,285 72
Way ".....	4,542 82	4,631 31	5,219 95	6,069 02	6,225 32	4,931 38
Express,.....	358 33	358 34	358 33	358 33	358 34	358 33
Transport of mails,.....	1,794 27	1,794 27	1,794 27	1,794 27	1,794 27	1,794 27
Use of engines,.....						
Use of cars... ..			24 00	90.00		
Rent,.....						
Other earnings specified in detail as follows :.....						
Total,	\$56,273 79	\$71,438 57	\$79,831 07	\$98,241 30	\$77,991 76	\$72,658 49

DETAILS OF EARNINGS, CONTINUED.

SOURCE.	JANUARY.	FEBRUARY.	MARCH.	APRIL.	MAY.	JUNE.
Through passengers,.....	\$5,561 94	\$5,998 65	\$8,047 78	\$11,436 82	\$9,696 55	\$9,015 98
Way passengers,.....	4,773 82	5,032 75	7,333 93	6,613 72	5,731 70	6,652 26
Through freight,.....	24,451 58	24,367 61	28,022 02	37,499 93	46,755 05	45,347 75
Way freight,.....	3,652 11	3,754 53	4,989 84	4,157 79	5,619 83	5,301 73
Express,.....	358 33	358 33	358 34	358 34	358 33	358 34
Transport of mails,.....	1,794 27	1,794 27	1,794 17	1,794 27	1,794 27	1,794 27
Use of engines,.....						
Use of cars,.....						
Rent,	150 00	25 00		150 50		13 50
Other earnings specified in detail as follows:.....						1,163 73
Total,....	\$40,742 05	\$41,331 14	\$50,546 28	\$62,011 37	\$69,855 73	\$69,647 56

TABLE J.

ACCIDENTS.

	EMPLOYEES.		OTHERS.	
	Killed.	Injured.	Killed.	Injured.
Trains thrown from the track,...				
Struck by bridge, while on top of freight car,				
Run over while walking on track,	2			1
Injured at road crossing.....				1
Total,	2			2

Total number of persons killed..... 2

Total number of persons injured but not killed,..... 2

Sept. 2d 1859, the mail train ran into a wagon at Lanesville crossing, in Berlin, throwing a man from the wagon injuring him slightly.

January 23d 1860, a freight engine while switching at Ridley's backed over Patrick Carr, who was carelessly crossing the track, killing him. He was employed as Watchman at Ridley's Bridge.

March 19th, 1860, Alexander McConnell, a stranger, was thrown from the track by a passenger train and his leg broken. He was walking on the track in Northfield yard.

May 19th 1860, John Burke a track hand was found dead on the track in Northfield in the morning. He was probably intoxicated and was run over by a train in the night,

TABLE K.

EMPLOYEES AND COMPENSATION.

48 Machinists,	average, \$1 40 per day.	
47 Woodworkmen,....	" 1 40 "	
8 Painters,.....	" 1 46 "	
27 Blacksmiths,.....	" 1 24 "	
25 Rail repairers,.....	" 1 14 "	
34 Enginemen,.....	" 2 20 "	
32 Firemen,.....	" 1 15 "	
50 Watchmen, laborers about shops, &c.	" 1 00 "	
250 Section men,.....	" 96 "	
2 Division masters,.....	" 2 50 "	
1 Master mechanic,.....	150 00 per mth.	
2 Conductors, wood and gravel trains,	" 50 00 "	
55 Men on " " " "	" 90 per day.	
1 Wood agent,.....	83 33 per mth.	
21 Freight conductors,.....	" 42 40 "	
15 " brakemen,.....	" 31 50 "	
56 Bridge and depot repairers,.....	" 1 37 per day.	
5 Passenger conductors,.....	" 56 00 per mth.	
12 Baggage men and brakemen,..	" 35 00 "	
6 Masters transportation, ticket masters, and clerks,.....	" 56 66 "	
44 station agents, clerks, &c.,....	" 41 81 "	
21 Laborers at stations,..	" 1 00 per day.	
26 Wood sawyers,.....	" 1 15 "	
17 Laborers at St. Albans car factory,	" 1 20 "	

The bridges on the road of recent construction have been built of white pine lumber, with the exception of some of the cross timbers under the track. For these hemlock and spruce have in some cases been used.

All the truss bridges are covered. But two truss bridges have been rebuilt in consequence of decay; one in 1858 and one the present year. Two others have been burnt, one of which was rebuilt in 1855 and the other in 1859. All four of these bridges have been rebuilt upon the lattice plan, of white pine, and they are well covered.

Of the older bridges, seven are built on the Howe plan, and most of the remainder are Burr bridges. We think the Howe and Lattice bridges best of any in use on this road. A practical bridge builder is employed on this road whose duty it is to inspect all the bridges constantly, and to see that all needed repairs are promptly made, and report from time to time the condition of the bridges to the managers.

We have used the wooden chair to some extent recently, but our experience has not been sufficient to enable us to judge of its durability.

Hemlock, tamarack, spruce, birch, beach and maple ties have been used; of these tamarack has been the most durable. All the maple, beach and birch, and most of the spruce ties now in use have been burnetized. This increases their durability very much. Its cost is about seven cents per tie.

The apparatus we use for burnetizing cost about \$8000 exclusive of building and power.

Our recent experience proves the American rails to be very much superior to the English rails in use on this road. We have used the past two years nothing but American rails.

The road is divided into sections of from four to five miles in length, and the sectionmen are required to pass over the track before the early morning trains, and frequently during the day.

The speed of trains is limited—that of freight trains must not exceed the time indicated in the time table. Each station agent is required to report to the superintendent the time of arrival and departure of all trains.

In case of accident or delay upon the road, the conductor of the train is required to have signals posted not less than fifteen hundred feet in each direction, to guard against collision with an approaching train.

VERMONT CENTRAL RAILROAD.

OFFICERS OF THE COMPANY.

Directors.

GEORGE M. DEXTER,
 C. O. WHITMORE,
 JOSEPH CLARK,
 L. UNDERWOOD,
 J. G. SMITH,
 JOHN WHEELER,
 L. BRAINERD, JR.

GEORGE M. DEXTER, *President.*
 W. C. SMITH, *Treasurer.*
 E. W. PECK, *Secretary.*

Trustees 1st Mortgage Bonds.

L. BRAINERD,
 JOSEPH CLARK,
 J. GREGORY SMITH,

G. MERRILL, *Superintendent for Trustees.*

STATE OF VERMONT. }
 FRANKLIN COUNTY, ss. }

St. Albans, Sept. 10, 1860.

We, L. Brainerd, Joseph Clark and J. Gregory Smith, Trustees 1st Mortgage Bonds Vt. Central Railroad, and G. Merrill, Superintendent, depose and say that the facts set forth, and statements made in the foregoing report, which has been signed by us are true and correct according to the best of our knowledge, information and belief.

Signed,

L. BRAINERD,
 JOSEPH CLARK,
 J. GREGORY SMITH, } *Trustees 1st Mortgage Bonds Vt. Central R. R. Co.*
 G. MERRILL, *Supt. 1st Mortgage Bonds.*

Subscribed and sworn to before me this 10th day of September, 1860.

GEO. J. STANNARD, *Justice of the Peace.*

ANNUAL REPORT

OF THE VERMONT AND MASSACHUSETTS RAILROAD COMPANY. FOR
THE YEAR ENDING AUGUST 31ST, 1860.

TABLE A.

STOCK AND DEBTS.

Capital stock, including the Greenfield Branch } and Vermont portion....	\$3.200.000
Total amount of capital Stock paid in,.....	2.214.225 15
Number of shares of capital stock issued,.....	28.801
There is no debt excepting the funded debt, which } amounts to....	1.003.900

The amount paid for interest each year is six per cent. on the
above funded debt.

TABLE B.

COST OF CONSTRUCTION.

For graduation and masonry,.....	\$1.461.323 12
For bridges,.....	199.895 31
For rails,.....	600.422 01
For chairs, spikes and cross-ties,.....	
For laying superstructure,	
For passenger and freight stations, buildings } and fixtures,.....	129.274 36
For engine and car houses, machine shops, } machinery and fixtures,.....	
For land, land damages and fences,.....	181.218 85
For engineering,.....	56.872 04
For incidental expenses, salaries, &c., during } the construction of the road,.....	81.964 62
For dividends of interest, discount on bonds, &c.,	332.250 02
	<hr/>
	\$3.042.720 33
Charged to Greenfield Branch in addition to } above,	248.495 08
	<hr/>
	\$3.291.215 41

TABLE C.

EQUIPMENT.

For locomotive engines and fixtures, (including snow plows),.....	}	95.638 62
For passenger and baggage cars,.....	.	20.190 00
For freight cars,.....	}	91.514 89
Gravel cars,.....	}	
Hand cars and repair cars,.....	}	18.306 69
Tools, &c.,.....	}	
Total cost of equipment,.....		225.650 20
Total cost of road and equipment, including Greenfield Branch,.....	}	\$3.516.865 61

TABLE E.

CHARACTERISTICS OF ROAD.

Length of road, including Greenfield Branch,.....	77 miles.
“ “ completed,.....	77 “
“ side tracks,.....	about 5½ “
Weight of rail per yard,.....	56 pounds.
Width of earth cuts at grade,.....	25 feet.
“ rock “ “	20 “
Slope of earth cuts,.....	30° to 35°
“ rock “	no slope.
Width of embankments at grade,.....	15 feet.

CHARACTER AND LENGTH OF BRIDGING.

	No. of structures	No. of spans.	Length of bridging in feet.
Trestle bridging,.....			
Truss bridging, 50 feet span and under,	11	15	
Truss do. 50 to 100 ft. span,.....	2	2	
Truss do. from 100 to 150 feet span,...	7	44	
Truss do. 150 feet span and over,...			
Draw bridges,.....			
Totals,.....	20	61	

Number of road crossings at grade,.....	63
“ “ “ above and below grade,.....	21
Number of cross ties per mile,.....	2052
Average length and size of cross ties,.....	7 feet, 8 by 6½ inches.
Kinds of timber used for cross ties,.....	Chestnut.
Chairs, number per mile,.....	556
Wrought or cast iron,.....	cast.
Average weight of cast iron chairs,.....	22 lbs.
Whole number of single switches on main track,.....	67
Kind of switches used,.....	lever.

GRADIENTS AND ALIGNMENT.

Maximum grade,.....	58 feet.
Amount of straight line, miles,.....	31 13-20ths.
“ curved “ “	45 7-20ths.

BUILDINGS AND FIXTURES.

Passenger houses,.....	19
Freight houses,.....	19
Engine houses,.....	5
Repair shops,.....	4
Water stations,.....	9
Dwellings,	11
Wood sheds,.....	22
Turn tables,.....	5

Other buildings as follows :

General office, Fitchburg, Mass.

Store building, “ “

Car house, Brattleboro, Vt.

Lumber house, Athol, Mass.

EQUIPMENT.

Number of locomotives owned by the Company on the 31st day of August, 1860.

	Under 16 tons.	16 to 20.	20 to 25.	25 to 30.	30 tons and over.
In good repair,.....			8		
Requiring slight repair,.....					
Requiring heavy repairs,.....			3		

Number of cars owned by the company August 31, 1860.

First class 8 wheel passenger cars in good repair,.....	7
“ “ “ “ “ “ wanting repair,.....	1
Baggage, express and mail cars in good repair,.....	4
“ “ “ “ “ “ wanting repair,.....	1
Covered freight and cattle 8 wheel cars in good repair,.....	80
“ “ “ “ “ “ wanting repair,.....	4
Platform 8 wheel cars in good repair,.....	74
Other freight cars,.....	22
Gravel cars,.....	16

TABLE F.

BUSINESS OF THE YEAR.

Miles run by passenger trains,.....	54.406
“ “ freight trains,.....	49.650
“ “ gravel and construction trains,.....	} 3.422
“ “ wood trains,.....	
Number of through passengers carried in cars,.....	} 86.376
Number of way passengers,.....	
Number of tons of freight carried in cars one } mile	1.734.868 ⁴²³ / ₁₀₀₀
Average rate of speed of ordinary passenger trains,.....	22 miles per hour.
Average rate of speed of freight trains,.....	10 miles per hour.
Rate of fare charged first class through passengers per mile,.....	3 cents nearly.
Rate of fare charged first class way passengers per mile,.....	3 cents nearly.
Rate per ton per mile charged on 1st class thro' freight, 7 cents.	
“ “ “ “ 2d “ “ “ 6 cents.	
“ “ “ “ 3d “ “ “ 5 cents.	
“ “ “ “ 1st “ way freight, 10 cents.	
“ “ “ “ 2d “ “ “ 8 cents.	
“ “ “ “ 3d “ “ “ 6 cents.	

TABLE G.

EXPENSES OF MAINTAINING ROADWAY AND REAL ESTATE,

For the year ending August 31st, 1860.

Ordinary repairs of road bed and railway,.....	\$20.798	65
Cost of iron rails used in repairs,.....	16.176	36
Cost of repairs of iron rails.....	}	inc'ded above.
Cost of relaying rails,.....		
Number and kind of cross ties used for renewals,.....		
Cost of same,.....		
Cost of relaying,.....		
Insurance and taxes on real estate... ..	1.977	42
Repairs of bridges.	3.390	73
“ stations,	6.153	71
“ fences,.....	298	71
“ masonry,.....	included above.	
Total... ..	\$48.795	58

COST OF REPAIRS OF MACHINERY.

Repairs of engines and tenders... ..	17.097	93
Repairs of passenger and baggage cars.....	2.636	07
Repairs of freight cars.....	9.031	57
“ of gravel cars,.....	360	09
Repairs of tools and machinery in shops,.....	1.047	59
Road furniture,.....	670	90
Total.....	\$30.844	15

TABLE H.

COST OF OPERATING THE ROAD.

For the year ending August 31st, 1860.

Fuel, including cost of preparing the same,.....	\$11.071 04
Cost of oil and waste for engines and tenders,...	} 2.310 52
“ “ “ passenger and baggage cars,.....	
“ “ “ freight cars,	
Loss and damage of goods,.....	} 482 64
Loss and damage of baggage,	
Damages to property, including fire, and animals killed on road,	
Incidental expenses,.....	1.495 06
Number of agents,	19
Number of clerks,	3
Clearing snow,.....	310 22
Porters and watchmen,	} 2.460 24
Switchmen,	
Water station expense,.....	569 69
Conductors and baggage men,.....	} Included elsewhere
Brakemen,	
Enginemen and Firemen,	
For salaries of Trustees, President, Directors, Sec- retaries, Treasurer and Superintendent,.....	5.455 00
For printing, and stationery,.....	357 16
For law expenses,.....	398 29
Other expenses in detail as follows :	
Expenses of passenger department,.....	11.137 34
“ freight “	18.798 27
Rent to Connecticut River Railroad Company,.....	1.250 00
Land purchased by the company,.....	3.913 87
	<hr/>
	\$55.009 34

RECAPITULATION OF EXPENSES.

Maintaining roadway,	\$48.795 58
Repairs of machinery,	30.844 15
Operating,	55.009 34
	<hr/>
Total,.....	\$134.649 07

TABLE I.

EARNINGS, RECEIPTS AND PAYMENTS.

Earnings.

From passengers	\$68.280 89
From freight.....	128.978 48
From other sources.....	53.970 39
	<hr/>
	\$251.229 76

VALUE OF MATERIALS ON HAND.

Wood, 2.715 cords, valued at.....	\$7.150
Oil, 409 gallons.....	360 00
Waste, 500 pounds.....	35 00
Iron rails, 150 tons, old.....	3.750 00
Chairs, 22.000 pounds.....	550 00
Spikes, 900 pounds.....	29 50
Iron and other metals, unwrought.....	} 7.748 00
Iron and other metals, worked and partly worked. }	
Lumber.....	1.380 00

DETAILS OF EARNINGS, FOR THE YEAR ENDING AUGUST 31ST, 1860.

SOURCE.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.	JANUARY.	FEBRUARY.
Through passengers,.... }	\$8,214 21	\$5,830 05	\$5,417 91	\$3,733 85	\$3,561 37	\$3,927 77
Way " " " " }						
Through freight,.... }	11,277 89	11,340 22	10,123 06	9,564 78	10,501 36	8,837 77
Way " " " " }						
Express,.....	279 41	279 41	279 41	329 41	329 41	329 41
Transport of mails,.....	500 00	500 00	500 00	500 00	500 00	500 00
Use of engines,.....						
Use of cars,.....						
Rent,.....	3,656 67	3,519 65	3,347 50	3,690 33	3,501 50	3,268 75
Tools,.....	60 00	60 00	115 00	86 00	56 00	46 00
Miscellaneous,.....	53 71	203 67	513 69	20 21	166 85	36 41
Total,	\$24,041 89	\$21,733 00	\$20,296 57	\$17,924 58	\$18,616 49	\$16,946 11

DETAILS OF EARNINGS, CONTINUED.

SOURCE.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.
Through passengers.....	\$5.425 34	\$5.317 82	\$4.894 10	\$5.423 52	\$7.222 54	\$9.312 41
Way passengers,.....						
Through freight,.....	12.722 77	12.988 69	11.711 74	9.886 14	9.649 03	10.375 03
Way freight,.....						
Express,.....	329 41	329 41	329 41	329 41	329 41	929 41
Transport of mails,.....	500 00	500 00	500 00	500 00	500 00	500 00
Use of engines,.....						
Use of cars,.....						
Rent,.....	3.686 67	3.506 50	3.273 33	3.666 67	3.547 92	3.263 42
Tolls,.....	55 00	50 00	42 00	53 00	58 00	66 00
Miscellaneous,.....	141 17	74 00	100 13	85 03	66 68	30 01
Total,.....	\$22.860 36	\$22.766 42	\$20.850 71	\$19.943 77	\$21.373 58	\$23.876 38

TABLE J.

ACCIDENTS.

September 6, 1859, John Bass, of Shelburne Falls a member of the M. V. M., en route for the State Encampment, at Concord, Massachusetts, fell under the train and had one foot badly crushed, in consequence of attempting to get on board the train while in motion, at Ashburnham Junction.

TABLE K.

EMPLOYEES AND COMPENSATION.

19 Agents,	\$25 00 to \$80 00	per mth.
4 Conductors, Pass. and Freight, ...	45 00 to 50 00	"
3 Clerks,	35 00 to 70 00	"
1 Road and Bridge Master,	100 00	"
5 Section Masters,	40 00 to 45 00	"
39 Trackmen,	90 to 1 12	per day.
1 Toll Gatherer,	15 00	per mth.
1 Flagman, ...	30 00	"
3 Watchmen,	26 00 to 35 00	"
2 Switchmen,	30 00 to 35 00	"
6 Brakemen, Pass. and Freight,	30 00 to 40 00	"
1 Porter,	30 00	"
3 Painters,	1 25 to 1 75	per day.
2 Bridgemen,	1 62 to 1 75	"
1 Master Carpenter,	60 00	per mth.
10 Machinists,	1 50 to 1 90	per day.
7 Laborers,	1 00 to 1 10	per day.
3 Blacksmiths,	1 65 to 2 00	"
6 Rail Repairers, ...	1 00 to 2 00	"
6 Engineers,	60 00	per mth.
6 Firemen,	30 00	"

Directors.

THOMAS WHITEMORE,
JOHN J. SWIFT,
JAMES CHEEVER,
JOSEPH GOODHUE,
D. N. CARPENTER.

SALARIES.

Trustees,.....	\$100 each.
President,.....	\$1500
Superintendent,.....	1500
Treasurer and Clerk,.....	1500

All of which is respectfully submitted by

THOMAS WHITEMORE, JOSEPH GOODHUE, D. N. CARPENTER, JAMES CHEEVER, JOHN J. SWIFT,	}	<i>Directors.</i>
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STATE OF MASSACHUSETTS, }
SUFFOLK COUNTY, ss.

We, Joseph Goodhue, D. N. Carpenter, James Cheever, and John J. Swift, severally depose and say that the facts set forth, and statements made in the foregoing report, which has been signed by them, are true and correct according to the best of their knowledge, information and belief.

Signed,	JOSEPH GOODHUE.
	D. N. CARPENTER,
	JAMES CHEEVER,
	JOHN J. SWIFT.

Subscribed and sworn to before me, this 9th day of October, 1860. BENJ. H. CURRIER, *Commissioner for Vermont,*
19 Kilby Street, Boston, Mass.

STATE OF MASSACHUSETTS, }
MIDDLESEX, ss.

OCTOBER 4th, 1860.

I, Thomas Whittemore, depose and say that the facts set forth, and statements made in the foregoing report, which has been signed by me, are true and correct according to the best of my knowledge, information and belief.

Sworn to before me,	EDWARD G. LUCAS,
	<i>Justice of the Peace.</i>

RAILROAD COMMISSIONER'S OFFICE, }
RUTLAND, APRIL 16, 1860. }

To O. T. RUGGLES,

Superintendent Vermont and Massachusetts Railroad:

Desiring to make as complete a report as practicable of the condition and management of the railroads in this State, for the present year, I ask your attention to the following particulars:

Please state, with as much detail as may be necessary,

The kind of timber used in your bridges for chords, braces, floor timbers, etc.—Northern and southern pine and white oak.

Whether your bridges were built of seasoned timber or otherwise.—Partly seasoned.

If different kinds of timber were used, which has proved the most durable and best adapted to the purpose.—Southern pine.

Whether your bridges have been covered or not, and what is the condition of those covered and of those not covered.—Covered.

When they were built.—1850, four years previous.

Whether any and how many it has been necessary to rebuild in consequence of decay, and whether such bridges were covered or not.—Some small bridges not covered have been rebuilt,—seven or eight in number, and not over 30 feet in length.

State also if you have found it necessary to rebuild or renew the principal timbers in your deck bridges in consequence of decay.—Some of floor timbers and track stringers on outside of bridges.

State whether your bridges are built after Howe's patent, the common lattice or other pattern, and which from your experience proves best.—Mostly Howe's patent. Two are Pratt's patent. Like Howe's best.

Please to state if you have adopted any means to relieve the shock of the engine and the train upon the joints of the rails, and if so, what has been the effect—if you have used wood chairs instead of iron, what has been the result, and what is the probable durability of such chairs—if you have tried the experiment of laying rails and breaking joints, that is, making a joint on one side opposite the centre of the rail on the other side, what has been the effect upon the joint and upon the opposite rail, and what effect upon the motion of the cars.—Have used cast iron chairs—no wood chairs. Endeavor to keep joints up. Never tried experiment of breaking joints.

State what kinds of timber have been used on your road for cross-ties, and what has been the durability of each kind. If you have used "Burtonized" wood for cross-ties, please to state the results of such experiment and how long such ties have continued *good*. Please to state the expense of Burtonizing ties per hundred, and also what is the necessary cost of the whole apparatus for Burtonizing wood.—Use chestnut ties. Average eight or nine years. Have not used "Burtonized wood."

State what has been the annual expense of repairing and renewal of rails on your road, and what the length of time the rail has lasted without repair, and whether American or English iron is used, and the comparative value of each.—Ten to thirty thousand dollars per year. Cannot give the average wear without repair.

You will state if you employ a practical bridge builder on your road, to inspect and make promptly all needed repairs of bridges; if not, state what means you do adopt to secure the constant security of your bridges.—We do.

State the usual length of sections on your road, and the number of men ordinarily employed on each section.—Average fourteen miles, and nine men to the section.

How often the section man is required to pass over and inspect his section.—Every morning.

What method you adopt to insure the prompt and faithful discharge of duties enjoined upon him.—Endeavor to get reliable men, and discharge those who disobey the rules.

State whether you limit the speed of trains between stations (and more particularly freight trains), and what means you adopt to insure obedience to regulations on the part of Conductors and Enginemen.—Speed of trains limited between stations.

State what means are employed on your road, in case of accident to a moving train, to guard against collision from a following or advancing train.—Send flag towards approaching train.

State *all* the instances of passenger and freight trains being thrown off the track, and the cause of such accident.—Recollect of no instance during the past year.

ANNUAL REPORT

OF THE VERMONT AND CANADA RAILROAD COMPANY, FOR THE
YEAR ENDING AUGUST 31st, 1900.

TABLE A.

STOCK AND DEBTS.

The original capital stock of the company is in amount, \$1,348,500. Represented by 13,485 shares.

Since the last annual report, a little over thirty thousand dollars of additional stock has been issued, in pursuance of the vote of the stockholders.

This company has no funded debt.

There are claims against the company to a small amount which are unsettled, most of which are in dispute. A further expenditure is being made by the company in constructing their road into Burlington, as required by the act of the last Legislature.

TABLE B.

COST OF CONSTRUCTION.

The cost of construction is represented by the amount of the capital stock. It is proper, perhaps, to say that the cost of construction is now involved and to be determined in a suit in chancery, pending in Franklin county.

The amount expended thus far in constructing the road into Burlington, as required by the act passed last fall, we cannot now state without much trouble and inconvenience, as work is still going on, and the road not yet completed.

TABLE C.

EQUIPMENT.

The company have no equipment. The road was many years since leased to the Vermont Central Company, and has been run by them. This road and the Central road are now managed and operated by receivers appointed by the court of chancery.

TABLE E.

CHARACTERISTICS OF ROAD.

Reference is made to the report of the trustees or managers of the Central Company for the desired information in this table, and also in all the tables to K., inclusive.

TABLE K.

OFFICERS OF THE COMPANY.

Directors.

LUCIUS B. PECK, *President.*

JOHN PORTER, *Vice President.*

Directors.

E. MOTT ROBINSON,
EDWARD BLAKE,
WORTHINGTON C. SMITH,
JED. P. CLARK.

WORTHINGTON C. SMITH, *Clerk and Treasurer.*

The present Board of Directors were elected last November, but no salaries have been fixed.

STATE OF VERMONT, }
WASHINGTON COUNTY, ss, }

I, Lucius B. Peck, depose and say that the facts set forth, and statements made in the foregoing report, which has been signed by me, are true and correct according to the best of my knowledge, information and belief.

Signed,

LUCIUS B. PECK.

Subscribed and sworn to before me, this 10th day of September, 1860,

TIMOTHY P. REDFIELD,
Master in Chancery.

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